

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE N/A		PAGE OF PAGES 1 164	
2. AMENDMENT/MODIFICATION NO. 0001		3. EFFECTIVE DATE JAN 03, 2002		4. REQUISITION/PURCHASE REQ. NO. N/A		5. PROJECT NO. (If applicable) SPEC. NO. 1235	
6. ISSUED BY DEPARTMENT OF THE ARMY U.S. ARMY ENGINEER DISTRICT, SACRAMENTO SACRAMENTO, CALIFORNIA 95814-2922		3. EFFECTIVE DATE JAN 03, 2002		7. ADMINISTERED BY (If other than Item 6) DISTRICT ENGINEER U.S. ARMY ENGINEER DISTRICT, SACRAMENTO 1325 J STREET SACRAMENTO, CALIFORNIA 95814-2922 ATTN: CONTRACTING DIVISION		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				<input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. DACA05-01--R-0017 <input checked="" type="checkbox"/> 9B. DATED (SEE ITEM 11) N/A <input type="checkbox"/> 10A. MODIFICATION OF CONTRACTS/ORDER NO. N/A <input type="checkbox"/> 10B. DATED (SEE ITEM 13) N/A			
CODE		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended.							
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required) N/A							
NOTE: ITEM 13 BELOW IS N/A.							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
<input checked="" type="checkbox"/> A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. N/A							
<input type="checkbox"/> B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).							
<input type="checkbox"/> C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
<input type="checkbox"/> D. OTHER (Specify type of modification and authority) N/A							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) TRACON (Terminal Radar Area Control Facility) Edwards AFB, CALIFORNIA							
1. Revised Pages: Front End Page (1,5 thru 7 of 215), 01010-3, 01011-17, 01011-18, 01011-31, 01011-32, 01011-37, 01011-38, 01011-62, 01011-130, 01011-131, 01011-132, 01012-2, Section 01330, Section 01505, Section 13280							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
(Signature of person authorized to sign)				BY (Signature of Contracting Officer)			

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>		1. SOLICITATION NO. DACA05-01-R-0017		2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED(RFP)		3. DATE ISSUED 12-Dec-2001		PAGE OF PAGES 1 OF 215	
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.									
4. CONTRACT NO.			5. REQUISITION/PURCHASE REQUEST NO. W62N6M-1155-1293				6. PROJECT NO.		
7. ISSUED BY DEPARTMENT OF THE ARMY CORPS OF ENGINEERS. SACRAMENTO 1325 J STREET SACRAMENTO CA 95814-2922 TEL:(916) 557-5238 FAX: (916) 557-7842			CODE DACA05		8. ADDRESS OFFER TO <i>(If Other Than Item 7)</i> CONTRACTING DIVISION - ROOM 870 1325 J STREET SACRAMENTO CA 95814-2922 TEL: FAX:			CODE DACA05	
9. FOR INFORMATION CALL:		A. NAME				B. TELEPHONE NO. <i>(Include area code)</i> <i>(NO COLLECT CALLS)</i>			
SOLICITATION									
NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".									
10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS <i>(Title, identifying no., date):</i> TRACON Terminal Radar Approach Controls, Edwards AFB, CA. Spec. No. 1235 Description: Additions to and alterations on the Terminal Radar Area Control Facility (TRACON) are required to provide a modern, properly configured facility . Facility requirements include space for training, maintenance, air traffic control, communications equipment, and administrative support. The project will consolidate all functions into a single facility of 8,m454 sq. ft. of additional new structure and of 18,916 sq. ft. of renovation to the existing structure. Facility requirements include space for training, maintenance, air traffic control, communications equip. and administrative support. This is a design/build project; the offeror chosen will complete the design and construct the facility. The acquisition method is negotiated procurement. A technical and cost proposal will be required. Evaluation by the Government will result in selection of a firm that represents the best advantage to the Government. ESTIMATED COST RANGE OF PROJECT: \$1,000,000 to \$5,000,000									
11. The Contractor shall begin performance within <u>10</u> calendar days and complete it within <u>365</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. (See FAR 52.211-10 .)									
12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO							12B. CALENDAR DAYS 10		
13. ADDITIONAL SOLICITATION REQUIREMENTS: A. Sealed offers in original and <u>1</u> copies to perform the work required are due at the place specified in Item 8 by <u>15:00:00</u> (hour) local time <u>01/14/02</u> (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due. B. An offer guarantee <input checked="" type="checkbox"/> is, <input type="checkbox"/> is not required. C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference. D. Offers providing less than <u>120</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.									

SOLICITATION, OFFER, AND AWARD*(Construction, Alteration, or Repair)***OFFER (Must be fully completed by offeror)**14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*15. TELEPHONE NO. *(Include area code)*16. REMITTANCE ADDRESS *(Include only if different than Item 14)***See Item**

CODE

FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS

SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF*(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)*

AMENDMENT NO.

DATE

20A. NAME AND TITLE OF PERSON AUTHORIZED TO
SIGN OFFER *(Type or print)*

20B. SIGNATURE

20C. OFFER DATE

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

SEE SCHEDULE

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION
DATA24. SUBMIT INVOICES TO ADDRESS SHOWN IN
*(4 copies unless otherwise specified)***ITEM**

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

☐ 10 U.S.C. 2304(c)☐ 41 U.S.C. 253(c)

26. ADMINISTERED BY

CODE

27. PAYMENT WILL BE MADE

CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE**28. NEGOTIATED
AWARD***(Contractor is required to sign this*

document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

**29. AWARD** *(Contractor is not required to sign this document.)*

Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON
TO SIGN *(Type or print)*31A. NAME OF CONTRACTING
OFFICER*(Type or print)*

30B. SIGNATURE

30C. DATE

31B. UNITED STATES OF
AMERICA
BY

31C. AWARD DATE

PRICING SCHEDULE

CONTRACTOR SHALL FURNISH ALL PLANT, LABOR, MATERIAL, EQUIPMENT, ETC. NECESSARY TO PERFORM ALL WORK IN STRICT ACCORDANCE WITH THE TERMS AND CONDITIONS SET FORTH IN THE CONTRACT TO INCLUDE ALL ATTACHMENTS THERETO.

LINE ITEM NO.	DESCRIPTION	QUANTITY	UNIT OF MEASURE	UNIT PRICE	TOTAL PRICE
0001	Design and Construction of PHASE 1, Which is the new TRACON Facility, fully sprinkled, Including . New TRACON Control Room . New TRACON Equipment Room . New 2 Story Addition	1	LS	LUMP SUM	\$_____
OPTIONS					
0002	(OPTION # 1) PHASE 2, Renovate existing Control Room to new SPORT Control Room and Administration Area.	1	LS	LUMP SUM	\$_____
0003	(OPTION # 2) PHASE 2, Provide a complete and usable fully sprinkled Fire Suppression System for entire remainder of Building 2579.	1	LS	LUMP SUM	\$_____
0004	(OPTION # 3) PHASE 2, Renovate existing 2nd Floor, Men & Woman's Toilet rooms, Janitor				

	closet, Corridor, Vending Area	1	LS	LUMP SUM	\$_____
0005	(OPTION # 4)PHASE 2, Renovate existing 1st Floor Restrooms, Technician Office, Breakroom, Supply Room	1	LS	LUMP SUM	\$_____
0006	(OPTION # 5)PHASE 2, Modify existing 1st Floor Equipment Room	1	LS	LUMP SUM	\$_____
0007	(OPTION # 6)PHASE 2, Modify existing 1st Floor TRACON Building	1	LS	LUMP SUM	\$_____
0008	(OPTION # 7)PHASE 2, Modify existing 2nd Floor RAPCON/CCF Addition	1	LS	LUMP SUM	\$_____
0009	(OPTION # 8)PHASE 2, Remove existing trailers See note #2 on sheet C1.41 SITE PLAN AND DEMOLITION PLAN; Remove Existing four antenna Towers	1	LS	LUMP SUM	\$_____

SUBTOTAL OPTION PRICE \$_____

TOTAL PRICE \$_____

1. Prices must be submitted on all individual items of this Pricing Schedule.
Failure to do so may cause the proposal to be determined "unacceptable".

2. If a modification to a price is submitted which provides for a lump sum adjustment to the total price, the application of the lump sum adjustment to each item in the Pricing Schedule must be stated. If it is not stated, the bidder/offeror agrees that the lump sum adjustment shall be applied on a pro rata basis to every item in the Pricing Schedule.

3. The bidder/offeror shall distribute his indirect costs (overhead, profit, bond, etc.) over all the items in the Pricing Schedule. The Government will review all submitted Pricing Schedules for any unbalancing of the items. Any submitted Pricing Schedule determined to be unbalanced may cause the proposal to be determined "unacceptable".

4. The successful bidder/offeror grants the options listed in the Pricing Schedule to the Government. This option may be exercised any time up to (30) days after receipt of Notice to Proceed. Exercise of the option occurs upon mailing of written notice to the Contractor. Exercise will be made by the Contracting Officer. The price for exercise of the option includes all work and effort associated with the scope of that item. No additional time for contract completion will be allowed when an option is exercised. The given contract completion time was formulated to include time necessary to perform all option work.

5. EFARS 52.214-5000 ARITHMETIC DISCREPANCIES (MAR 1995)

(a) For the purpose of initial evaluation of bids/offers, the following will be utilized in resolving arithmetic discrepancies found on the face of the Pricing Schedule as submitted by bidders/offerors:

- (1) Obviously misplaced decimal points will be corrected;
- (2) Discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected;
- (4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid/offer evaluation, the Government will proceed on the assumption that the bidder/offeror intends the bid/offer to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid/offer will be so reflected on the abstract of bids/offers.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid/offer is low.

6. The Congress, in authorizing and funding this contract, has established certain cost limitations for the project. After reductions for solicitation costs, anticipated administration costs, and a prudent contingency allowance, currently about \$4,400,000 is available for this procurement. Proposals that exceed that indicated amount may not be considered.

support adjacent and connected to the renovated "new" control and equipment rooms for TRACON operations. The existing two-story facility shall have the ground floor (basement level) renovated to include a renovation of the existing unisex restroom with shower, a renovated break room, and a renovated newly created fitness/wellness room. The second floor shall be renovated to accommodate DOD's "SPORT" group, with renovated men and women's restroom facilities.

This design and construction project's goal for the building's exterior facade is to combine the existing structure with the new addition, and those renovated portions, into an aesthetically architecturally pleasing building that presents a unified appearance to the street. The building's exterior appearance is not meant to hide the building's function, but to embody it, in-part through the incorporation of locating the existing whip antennas, which are currently mounted on four antenna towers, onto the new two-story addition's roof. ***This contract shall have the contractor install the antenna mounts and their associated conduits; the FAA will relocate the antennas, plus any and all electronic, or TELCO equipment.***

3.3 Definition of Areas

The following frequently used terms are defined to establish a common understanding.

3.3.1 Net Area

Net area (occupiable area) is the gross square feet less building infrastructure and support members, such as exterior walls, mechanical spaces, fixed corridors, restrooms, stairwells, janitor closets, vestibules, etc. Net area is physical space available for use by the occupant to support the occupant's mission.

3.3.2 Gross Area

Gross area is all floor area measured from the outer surface of the exterior wall. Covered (but not enclosed) walks, terraces, balconies, and patios shall be counted as one-half of the total square meters. Uncovered walks, terraces, balconies, and patios shall not be counted.

4. DRAWINGS

4.1 General

The drawings included in this solicitation are for reference only. These drawings are to assist the proposers of the TRACON facility in preparing their proposals. They, the drawings, do not necessarily represent an "as-built" condition.

4.2 Designers' Qualifications

The lead designer for each discipline of the design team shall be a licensed professional Engineer/Architect with a minimum of six years experience. The interior design shall be designed/supervised by a certified or licensed (as appropriate for their State) interior designer who is NCIDQ certified or a licensed architect who can demonstrate a minimum of six years of interior experience with projects and references.

5. TECHNICAL CRITERIA

Technical criteria to be used for design and construction shall be taken from the most current references at the date of issue of the contract and

1.5 MECHANICAL FEATURES

1.5.1 HVAC

This project will use existing chillers, pumps and boiler located at the existing Tracon facility. The contractor is required to connect new mechanical equipment to existing mechanical equipment. In a previous construction contract the Federal Aviation Administration has already sized the boiler, chillers, cooling towers and pumps to accommodate the anticipated building loads for this project. Points of connections have also been provided in the existing mechanical room. The responsible person from the Federal Aviation Administration is John Parsons (310) 725-7466.

The general scope of FAA work will be:

Demolish in the main building mechanical equipment room:

- AH-1
- The 3 water chillers
- The 3 cooling towers
- The boiler
- All pumps
- All chilled, heating and condenser water steel piping only in the mechanical equipment room and out to the cooling towers.
- All controls associated with removed equipment.

Install new in the main building mechanical equipment room:

- AH-1
- 3@50 ton outdoor air cooled water chillers located in the equipment yard east of the mechanical equipment room.
- 2 heating water boilers
- Heating water and chilled water pumps
- All chilled and heating water copper piping only in the mechanical equipment room and out to the chiller equipment yard.
- Valved stuboffs in the mechanical equipment room for future Air Force connection for their piping for the new expansion/modernization.
- Controls for new equipment. This will include a Bacnet compatible chiller control system for connection to the future Air Force DDC system.

NOT included in any FAA work is:

- AH-2 or any of its related subsystems.
- Ductwork outside of the mechanical equipment room.
- Piping outside of the mechanical equipment room or the chiller equipment yard.
- HVAC in Annex or Clambake wings.

The new systems described above will be sized to handle the existing building and its future expansion.

- The equipment yard on the east side of the mechanical equipment room and immediately south of the main building is off limits to expansion. This is where the new outdoor air-cooled chillers will be.

- The points of connection for the heating and chilled water piping to the future building expansion are labeled heating water and chilled water stub off valves. These are sized 2-1/2" and 3" respectively.

This is where your contractor will start with his new piping.

1.5.1.1

The new Tracon Addition will be conditioned in part by a variable air volume (VAV) single duct terminal unit hot water reheat with return fan. It will be located in the mechanical room. The air distribution system shall follow the configuration and patterns that are standard to the industry. Use low or medium pressure systems. Avoid duct sections with inherently high air flow resistance. Minimize sharp turns and branching patterns which create air flow turbulence. The chilled water coil will be piped and connected to the existing chilled water distribution pump in the existing mechanical room. The hot water reheat coils in the terminal units also will be connected to the existing hot water distribution pump in the same mechanical room.

1.5.1.2.

"Sport" Control Room, Tracon Control Room and & Equipment Room defined in the arch section paragraph entitled "Net floor Areas" under "Clambake/Annex Alteration & New Addition" will have chilled and hot water coil computer room units. Each cooling system serving these spaces shall have standby cooling equipment thereby having 100% redundancy i.e. additional computer room unit. Tracon Control Room (FAA), Equipment Room defined in the arch section paragraph entitled "Net floor Areas" under "Clambake/Annex Alteration & New Addition", "SPORT" Tracon Control Room air distribution system shall be supplied and returned from over head ducts. Contractor shall follow the configuration and patterns that are standard to the industry. Use low pressure systems. Avoid duct sections with inherently high air flow resistance. Minimize sharp turns and branching patterns which create air flow turbulence. The chilled and hot water coils will be piped and connected to the existing distribution pumps in the existing mechanical room.

1.5.2 Plumbing

The plumbing system will be designed and installed in accordance with the National Standard Plumbing Code. A gas fired water heater with hot water recirculating pump will provide hot water to lavatories, showers and janitors sinks. Additionally the existing Unisex restroom on the first floor and the existing Men & Women toilet room on the second floor shall be gutted and replaced new. This is to include all fixtures, soil, cold, hot & re-circulation piping above ceiling and between walls.

1.5.2.1 Compressed air

Compressed air outlets shall be provided in the new Telco and new Equipment rooms. Compressed air lines will be labeled with maximum PSI.

1.5.3 Fire Protection

A wet pipe system will be provided for the new and existing facility. However, the TRACON Control Room, "SPORT" Control room, & Equipment Room defined in the arch section paragraph entitled "Net floor Areas" under "Clambake/Annex Alteration & New Addition" & existing first floor Equipment Room defined in the arch section paragraph entitled "Net floor Areas" under "Existing Tracon Building Alterations" will be provided with a double interlock preaction sprinkler system. Hydraulically calculated the fire flow based on the most hydraulically demanding 3000 square foot, with a 500 gallon per minute hose stream. The riser will be located in the new mechanical Room. If only Phase One is constructed and not Phase Two the sprinkler system in Phase One shall be designed to accommodate a future expansion of Phase Two in a future contract. Provide a tee with cap for the point of connection.

innovative in his approach to designing the front entry lobby. *The elevator will be required to access the new TRACON control/equipment room floor, both floors of the new two-story administration addition, and the existing control room second floor in building 2579, "SPORT". This can be accomplished by means of walkways, balconies, and/or corridors leading from the elevator. The elevator need not access the existing first floor equipment room of building 2579.* All personnel accessing each and every level or floor, shall have their movements viewed by remote video monitoring, the visitor or employee would then need the appropriate access code to leave the secure lobby area and enter the appropriate area of the building their job or visit requires. This video monitoring shall be viewed and recorded from a distinct location, coordinated during the design charrette. As just stated, an access code shall be required to enter all defined portions of this facility. These codes shall operate cipher locks installed on all entry points. Each entry point shall be determined during the design charrette.

Proximity of the new, meaning not existing - but new renovated area, TRACON control room and TRACON equipment room are critical to the continued operation of this facility. Existing antenna and radar cable runs must not exceed 200 feet. Existing communication manholes are located just outside the existing Clambake conference room on the north side of the building. The User has requested that this TRACON Control room and TRACON equipment room be both located on the same level. With these factors in mind, the User has requested that the new location be adjacent to the existing TRACON building, dictating that the existing Clambake/Annex receive the necessary renovations to accommodate these spaces. This portion of construction (renovated TRACON Control room and renovated TRACON Equipment room) shall be seismically separated from all other portions of the structure to meet the necessary requirements of an Essential Facility as described in paragraph 2.8.3.

The new two-story administrative area addition shall be designed and constructed adjacent to the new TRACON control room and TRACON equipment room. This proximity is necessary to allow the required movement of personnel between the two building's functional areas. Besides the required office spaces and conference rooms, the new break room shall have 20 feet of both base and wall hung kitchen cabinetry. A double compartment sink, with garbage disposal, and range hood with outside exhaust vent placed over the counter, will be included. Power outlets and allowances will be provided for microwave, toaster, crock-pot, coffee makers, and vending machines to be located and operated within that space.

Upon completion of the new administrative area, new TRACON control room and TRACON equipment room the FAA will begin installing the new workstations, supervisory and flight data consoles, and their supporting units. New support equipment will also be installed in the equipment room. Existing support equipment will be configured to feed both the new and old systems during a transition period. At that time the TRACON will be in a "dual-ops" or "shadowing" mode for eight (8) months. After completion of the dual operation, when the new systems are commissioned, the government will remove the old systems. Upon completion and direction to proceed, phase two renovations will begin.

2.6.2.2 Phase Two

This shall be designed in conjunction with phase one, to ensure a cohesive compatibility in both function and architectural appearance. But, construction will not take place until the FAA has completed their dual-ops scenario, and received full certification. At that time they will notify the contracting officer that construction on phase two can begin.

The current second floor existing control room shall be renovated to accommodate the DoD SPORT operation. The existing room's layout will be renovated to house new and similar functions. This, and the new fire

suppression system will necessitate a new suspended ceiling system.

Also, on the second floor are the existing men and women's restrooms. These facilities will be renovated to not only receive new fixtures and an upgraded plumbing system, but to accommodate the handicap as well.

The existing first floor equipment room will only receive minor renovations, to include a new fire suppression system and a new suspended ceiling system. The current unisex toilet with shower will be upgraded similar to the second floor restrooms. The break room will be renovated to receive new kitchen cabinetry, power upgrades for microwave, toaster, coffee makers, and vending machines to be located and operated within that space. The existing technician office space will be renovated into a new fitness/wellness center. These spaces will also require new lighting fixtures to comply with the required lighting levels appropriate for those functions.

The existing second floor RAPCON addition, administrative offices will receive a new fire suppression system, and a new suspended ceiling system.

All other spaces in the existing TRACON building # 2579 shall receive the new fire suppression system, and repairs to the existing structure and or finishes as required for the installation.

Demolish existing antenna towers.

2.6.2.3 Design

Aesthetically this design is critical in that there is an existing facility that will remain in place, while this contract asks that an addition be attached to the existing, and then as a whole, this facility be architecturally harmonious, compatible, and compliant with Edwards Air Force Base Design Standards. The functional, structural, mechanical, and electrical components of the building shall be coordinated in a manner to achieve a facility that meets the operational criteria and requirements set forth in this document. Proper design requires attention to architectural detail and a concern for achieving an aesthetic solution to the problem, while integrating the overall design of the facility with its functional requirements. All interior finishes are to be upgraded to meet the current requirements as set forth by the Base Civil Engineering Office at EAFB, and be coordinated throughout the entire facility.

This facility shall be constructed in two phases, creating two facilities. There will be a time lapse between the two construction periods. Because the two facilities will be operating separately, the portion associated with phase one will have a functioning fire suppression system, while the existing building portion associated with phase two will not have a fire suppression system initially. There will be essentially two separate buildings requiring a fire separation. Part of phase one will be to upgrade and install, as required, the necessary components to meet a minimum two (2) hour fire separation wall between the two facilities (two phases). If Option ~~#1~~ **#2**, construct ~~phase two~~, a complete and useable ~~facility~~ **Fire Suppression System for building 2579**, or Option ~~#3~~, install fire suppression system, per phase two requirements is exercised as part of this contract on award date, then the two-hour fire separation wall between the two facilities is not required, and may be eliminated. This reduction in cost should be reflected in the bid proposals for ~~these that~~ options.

An inherent feature of the TRACON Facility is its antennas. These are a necessary, and vital component of the facility, which need to be

Total renovated space.....5,500 sq.ft.
Total Clambake/Annex (approx.)5,500 sq.ft.

New Two-story Addition

This space would be adjacent to the renovated TRACON control room and equipment room to provide the necessary circulation access to conference room, offices, restroom facilities, etc..

- **(N) Administrative Area 3,300 sq.ft.**
 - a. Reception Area, main entrance with double doors vestibule, Stay in school position, 200 sq.ft.
 - b. Air Traffic Manager, 160 sq.ft.
 - c. Deputy Manager/Staff Officer, 120 sq.ft.
 - d. Administrative Officer/Secretary, 150 sq.ft.
 - e. Supervisors office space for 4 -total 250 sq.ft.
 - f. Staff offices for 2 -total 250 sq.ft.
 - g. Copy/Supply room, 200 sq.ft.
 - h. Union office (NATCA), 100 sq.ft.
 - i. Union office (PASS), 100 sq.ft.
 - j. Airway Facility Manager, 160 sq.ft.
 - k. Airway Facility Clerical, 100 sq.ft.
 - l. Safety office, 100 sq.ft.
 - m. Training room, Classroom, 3 stations CBI for AT/AF, 300 sq.ft.
 - n. Administrative library, 100 sq.ft.
 - o. Conference room, acoustic panel dividers to divided in half - 1000 sq.ft.
- **(N) Amenities 2,300 sq.ft.**
 - a. 1st floor Men's Restroom: two toilets, two urinals, four lavatories, two showers, changing area with 35 lockers (12"x 15"x ~~60~~ 72")
 - b. 1st floor Women's Restroom: three toilets, three lavatories, one shower, changing area with 15 lockers (12"x 15"x ~~60~~ 72")
 - c. 2nd floor Men's Restroom: one toilet, one urinal, two lavatories
 - d. 2nd floor Women's Restroom: one toilet, one lavatory
 - e. Janitor closet with a utility sink, 10 lineal feet of shelving, and mop/broom rack for four, shall be provided on each floor
 - f. Entry Lobby - 400 sq.ft.
 - g. Break room/area, kitchenette, vending machines
 - h. Covered patio/smoking area (approx. 10'x 12')
- **(N) Required Spaces 2,854 sq.ft.**
 - a. Circulation space (aprox. 15%)
 - b. Mechanical/Electrical/Communication rooms (approx. 6%)
 - c. Wall thickness (approx. 5%)

Total new construction.....8,454 sq.ft.

PHASE ONE Total Renovated Spaces.....5,500 sq.ft.
PHASE ONE Total New constructed Spaces.....8,454 sq.ft.

PHASE TWO

Existing TRACON Building Alteration (Renovation) Bldg. 2579

- **Existing Control Room Second Floor** **3,190 sq.ft.**
(R) "SPORT" Control room & Administrative Area
This area will require demolition of all existing interior walls to accommodate new room layouts.
 - a. (R)Control room, radar + Supervisor + handoff position, acoustical wall panels will be required, 1520 sq.ft.
 - b. (R)Maintenance office, 280 sq.ft.
 - c. (R)Maintenance storage, 190 sq.ft.
 - d. (R)Union office, 80 sq.ft.
 - e. (R)Break room/Locker room, 360 sq.ft.
 - f. (R)Manager office, 160 sq.ft.
 - g. (R)Reception/Clerical area, 220 sq.ft.
 - h. (R)Copy area, 60 sq.ft.
 - i. (R)Training office, 160 sq.ft.
 - j. (R)Corridor/circulation access
- **(R) Existing Second Floor, Men & Women Toilet rooms, Janitor closet, Corridor, Vending area** **1,150 sq.ft.**
 - a. (R)Men & Women Toilet rooms
 - b. (R)Janitor closet
 - c. (R)Circulation space with Vending area
- **(R) Existing First Floor Restroom, Technician office, Break room, Supply Room** **1,200 sq.ft.**
 - a. (R)Unisex toilet room, with shower
 - b. (R)Janitor closet
 - c. (R)Break room
 - d. (R)Wellness center (originally this space is the technician office)
- **(E) Existing First Floor Equipment Room** **3,000 sq.ft.**
 - a. (E)"modified" Equipment room, new suspended ceiling system w/ new light fixtures, and new fire suppression system
- **(E) Existing First Floor TRACON building** **2,650 sq.ft.**
 - a. (E)Mechanical, Engine, PCS, Battery rooms, new fire suppression system
- **(E) Existing Second Floor RAPCON/CCF Addition** **2,226 sq.ft.**
 - a. (E)Administrative space "minimal alteration", new suspended ceiling system w/ new light fixtures, and new fire suppression system

Total renovated space Bldg. 2579.....13,416 sq.ft.

PHASE ONE Total Renovated Spaces.....5,500 sq.ft.

PHASE TWO Total Renovated Spaces.....13,416 sq.ft.

TOTAL ALTERED/RENOVATED SPACES.....18,916 SQ.FT.

TOTAL NEW CONSTRUCTION.....8,454 SQ.FT.

End caps and corners shall be field adjustable to assure close alignment. Chair rails/corner guards shall consist of snap-on covers of resilient material mounted over continuous aluminum extrusion. Extruded aluminum retainers shall conform to ASTM B 2212, alloy 6063, temper T5 or T6. Chair rail/corner guard shall act as a shock absorber under impact without damaging wall to which it has been mounted.

2.7.10.2 Colored components shall have integral color and shall match one another.

2.7.10.3 To the maximum extent possible, the products shall be the standard products of a single manufacturer.

2.7.10.4 Installation shall be in accordance with the manufacturer's written instructions.

2.7.11 Interior Signage

Interior signage shall be fully integrated as a design element with the architecture and interior design. Signage for general office areas shall be modular to accommodate personnel changes or room function changes. Where possible, international symbols are to be used. Emergency/fire evacuation plans shall be located at key areas to ensure fire safety. Signage plaque colors shall be compatible with the interior color scheme. All offices, including any electrical or mechanical spaces shall have room signs.

2.7.12 Lockers

Lockers shall be steel with factory painted baked enamel finish. Lockers to be ~~381~~ **305** mm wide x 1828 mm tall, single tier, with sloped tops and "Z" type metal base. Door frames to be formed channel shaped, welded and ground flush. Doors shall have reinforced channel edges, welded and ground smooth. Lockers to be furnished with integral locks.

2.7.13 Toilet Partitions and Urinal Screens

2.7.13.1 Toilet partitions and urinal screens shall be solid surface solid plastic, conforming to CID A-A-60003, Type I (partition) and Type III (screen).

2.7.13.2 Partitions shall be floor mounted, minimum 915 mm (36") clear apart for width of stalls.

2.7.12.3 All urinals shall have screens which shall be 457 mm (18") deep, wall mounted, minimum 711 mm (28") clear apart.

2.7.14 Shelving.

2.7.14.1 Shelving in Janitor Room shall constructed of wood or metal and be supported by adjustable heavy duty steel brackets on wall. Two rows of shelving shall be provided, starting at 1850 mm (6'-2") above the floor, and going down towards the floor 400 mm (16") apart.

2.7.15 Toilet/Janitor Accessories.

2.7.15.1 Glass mirrors shall be provided in toilet rooms in conformance with ASTM C 1036, Type I transparent flat type, Class 1 clear, Glazing Quality q1 6mm (1/4").

full range continuous variable control of illumination from 100% down to minimum 5% light output by means of a linear slide dimmer. Dimmer switch shall incorporate a mechanical on-off switch to disconnect line voltage to the ballasts. Electronic dimming control circuiting that requires low voltage DC control wiring from dimmer switch to the ballast shall have a DC circuit installed in a metallic raceway separate from the AC line voltage and terminated as recommended by the ballast manufacturer. Dimmer switches shall be located to prevent inadvertent adjustment to lighting levels.

2.10.5.15 Exit and Emergency Lighting

Provide exit and emergency lighting in accordance with the requirements of NFPA 101, Life Safety Code. Exit lighting fixtures shall use a light emitting diode light source and shall be green color. Lighting circuits shall be connected to the essential bus, which is fed through an automatic transfer switch to both normal and emergency generator power, and will not require battery back-up.

2.10.5.16 Lighting Circuiting Requirements

Lighting circuits shall not be loaded above 12 amps.

2.10.5.17 Light Fixture Sources

Contractor shall provide sources (name, mailing address and phone number) for obtaining of replacement parts for all light fixtures, including all lamps and ballasts.

2.10.5.18 New lighting Fixtures

New lighting fixtures shall be included in new and remodeled areas of the facility, as specified above.

2.10.6 Fire Alarm System

2.10.6.1 Scope

Existing building fire alarm system shall be replaced with new. The new FACP shall be located in Lobby of new addition; a remote LED readout type or zonal type annunciator shall be located in new Control Room. System shall include: duct smoke detectors in both supply and return air ducts; smoke detectors in elevator lobbies, and smoke and heat detectors in elevator machine room and shaft; tamper and water flow alarm switches at sprinkler risers; ~~tamper and alarm switches at dry pipe system~~; manual pull stations along path of egress and all exterior doors; audible/visual alarm devices throughout building, and visual alarms in restrooms. Smoke detectors shall be provided below raised floors in ~~both~~ the FAA and Air Force Control and Equipment Rooms (pre-alarm) in accordance with NFPA 75. Heat detectors ~~for preaction sprinkler control shall be provided in the FAA and Air Force Control and Equipment Rooms shall control dry pipe sprinkler control valves~~. Fire Alarm/trouble condition transmission shall be accomplished by the existing Advantox fire transponder. Trouble and alarm signals shall be transmitted over telephone pairs to the base-wide Advantox system.

Provide and place in operating condition a multiplex automatic fire alarm control panel (FACP) and alarm system that is solid state microprocessor-based, addressable and intelligent, as described herein, and in strict accordance with NFPA 72. The system shall include, but not be limited to, a main FACP, a LED Readout type or Zonal Type Remote Annunciator, hardware and software, integral to the FACP, for transmitting the complete FACP

status via a pair of dedicated phone lines, and power supplies, initiating devices, notification appliances, conduit, wire, fittings, and all accessories required to provide a complete FACP operating system. The complete Fire Alarm System and Annunciator shall be the product of only one manufacturer. The FACP shall provide dynamic supervision of system electronics, wiring, manual pull stations, smoke detectors, heat detectors, water flow and tamper switches, software, and other detection devices. The FACP shall be capable of measuring and adjusting the sensitivity of detectors from the FACP. An alphanumeric display shall be provided to display custom messages and give readings of detector sensitivity, detector by detector. The FACP shall have the ability to perform multiple operations at the same time. These operations shall include but not be limited to timed functions and multiple configured sequences. Provide main fire alarm control panel with the local capacity to accept the total number of analog/digital inputs and signaling line circuits. The number of signaling line circuits and indicating appliance circuits required for the initiating and indicating devices ~~shown on the plans~~ shall be determined by the manufacturer's limit of devices per circuit. The contractor shall not exceed the maximum resistance and capacitance values specified by the manufacturer for each signaling device circuit or indicating appliance circuit. Each device on a signaling line circuit shall be checked continuously to include the following: sensitivity, response, opens, shorts, ground faults functionality and status. Provide a 20% capacity for future modifications. Transmission of alarm, and status of FACP, shall be automatically initiated by the FACP to the Edwards Air Force Base Fire Department Central Alarm Station over a pair of dedicated telephone lines.

Provide transmission equipment and software integral to the FACP that is 100% compatible with existing Central station equipment presently utilized by Advantor Corporation. Transmission of an alarm, supervisory or trouble condition to the Central Alarm Station shall occur ~~only upon actuation of either the Water Flow Switch, a smoke detector, heat detector, any Manual Pull Station or a Duet Smoke Detector~~ in accordance with the requirements of NFPA 72. FACP shall be provided with integral 24 volt D.C. battery backup & re-charging systems sized to meet system requirements in accordance with NFPA 72. Spare parts shall be distributor stocked within 90 miles. Provide separate power branch circuits for the fire alarm control system including the appropriate conduit, wires, dedicated circuit breakers, and ground wiring. Label branch circuits at the panelboard as Fire Alarm Control Panel and Graphic Annunciator.

Fire Alarm Control Panel shall activate ~~dry pipe sprinkler system,~~ and monitor air pressure in preaction and dry pipe systems. Fire alarm system notification alarm devices shall be included in control and equipment rooms to provide pre-alarm signals and alarms.

2.10.6.2 Initiating and Indicating Circuits

The elevator lobby shall be monitored by an automatic smoke detection system to control elevator recall. Smoke and heat detectors shall be provided in elevator machine room and top of elevator shaft for de-energizing elevator equipment prior to sprinkler activation, and activate firefighter's service, in accordance with ASME A17.1. Addressable smoke detectors shall be ionization type. Provide addressable manual pull stations at all exits from the building, and along any paths of egress in excess of 200 feet, for manual alarm notification capability per NFPA 101, Life Safety Code. Provide supervision of water flow switch to annunciate a general building Alarm upon sprinkler system activation. Provide supervised circuits for the tamper switches of the Post Indicator Valves and OS&Y shut-off valves to annunciate a **trouble condition if the shut-off valves are in the closed position**. Cross-zoned Heat detectors in the FAA and Air Force control and equipment rooms shall activate ~~dry pipe~~ their preaction sprinkler

systems. Comply with the requirements of NFPA 72 where dry pipe systems are installed in accordance with Section 2.9.3 "Fire Protection". Air pressure in preaction and dry pipe systems shall be monitored, and trouble alarm transmitted if pressure drops. Manual pull stations shall be double acting type with no break glass/plastic bar feature. Manual pull stations shall be openable with a screwdriver or allen wrench. Manual pull stations shall be provided semi-flush on the wall at 54 inches above finished floor. Provide duct smoke detectors in main return air ducts and in main supply air ducts of the building HVAC systems, where duct air flows are above levels stipulated in the NFPA 72 code. Activation of any portion of the fire alarm system, including duct detectors, shall shut down the HVAC supply and return fans until the FACP is reset. Duct detectors shall have a test feature that is activated by a push button or by a magnet. Duct detectors shall not be placed in direct exposure to sunlight or extreme heat. Duct smoke detectors shall be addressable and 100% compatible with the main FACP and powered and monitored by the FACP. Provide control interlocking circuits via the duct detectors to shut down the air handler motor starter. Provide magnetic door holder release, powered and controlled by FACP, wherever required. Provide indicating circuits with sufficient number of combination alarm audible & visual or visual-only indicating appliances within building to notify all occupants upon alarm. At least one visual alarm shall be placed in every occupiable room in a location that can be seen from all points in the room. Where this cannot be accomplished with a single visual alarm, provide as many devices as necessary to accomplish this requirement. Audible devices shall be spaced so they can be easily heard in any room in the facility with the door closed. Provide an audible/visual device and manual pull station in each mechanical and electrical room. All interior audio signals shall have a minimum sound rating of at least 85 dBA at 10 feet. Alarms used in exterior locations shall be specifically listed or approved for outdoors use and be provided with metal housing and protective grills. Provide visual-only alarm devices in all restrooms. Restrooms that contain showers shall have both audible and visual alarms. Zone alarm indicating appliance circuits separately to aid troubleshooting. Each sprinkler riser, wet pipe and preaction, shall be zoned separately. Each fire alarm initiation, signaling, and notification circuit shall be Class A (Style as indicated) with a return loop, to the main fire alarm panel, in a separate conduit. All fire alarm initiation devices, smoke detectors, heat detectors, manual pull stations, and duct smoke detectors, shall be on Style D (Class A) for initiating device circuits and Style 6 (Class A) for signaling line circuits. Wiring for signaling line circuits shall be minimum #16 AWG twisted pair with shielded jacket per NFPA 72. Indicating appliance circuits for combination audible alarm & visual strobes or visual strobes-only notification appliances shall be type Style Z (Class A), #14 AWG minimum. Visual strobes shall be ADA rated, one to three Hertz flash rate, and effective intensity of 75 candela. Conduit for all fire alarm system shall be minimum 3/4 inch. All cables shall be per the transceiver or FACP manufacturer's recommendations. All conduits shall be installed concealed above acoustical ceiling or in walls, except in mechanical/electrical rooms. Sprinkler water flow switch alarm and PIV tamper switch shall be required to be distinguished by device type, and a room number for water flow switch only.

2.10.6.3 Remote LED or Zonal Type Annunciator Panel

Provide a flush-mounted LED readout or zonal type remote annunciator panel in the Control Room of the new addition, which provides alphanumeric information of the entire facility. The alphanumeric display shall describe the zone activated. Annunciator lamps shall be extinguished only by operating the alarm-reset switch on the control panel. Annunciator shall contain a lamp test switch, an audible trouble signal and a trouble silence switch to silence the audible alarm, but not extinguish the

1. SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES:

1.1 Deviations from the RFP technical requirements will be considered and approved by the Contracting Officer, if the changes results in a significant improvement to the project or it exceeds the minimum RFP technical requirements.

1.2 The government has supplied an overview of the topographic information required for the project as part of the reference drawing sheets provided in the RFP drawings. Any additional topographic information required by the Contractor for design after award of the contract shall be procured and paid for by the Contractor.

1.3 The Contractor shall verify field conditions which are significant to design, by field inspection, researching and obtaining all necessary as-built drawings and reproducing them for his/her own use as necessary, and discussing status with knowledgeable personnel. The information shall be reflected in the design documents.

1.4 Based upon the requirements of paragraph 2.3 of Section 01011, Preliminary Geotechnical Information and Basis for Preparing Proposals, the contractor shall provide a complete soils investigation and foundation report.

1.5 The contractor shall submit within ~~105 (one hundred and five)~~ **252 (two hundred fifty-two)** calendar days after the Notice to Proceed (NTP), original tracings or projection cronoflexes of the approved final construction drawings and specifications, which will be in accordance with the requirements of the RFP, with all current revisions, the Contractor's proposal and all other terms and conditions affecting contract award.

1.6 For the final project drawings, the Contractor shall submit AutoCad 14 drawings, MS Word 2000 file disks and shall incorporate government format title blocks on his/her own sheets. The Specification Number is **1235** and the Drawing File Number is **233-25-813** for this project.

1.7 Design documents shall include architectural renderings, construction drawings, specifications and design analysis for categories such as, but not limited to, architectural, structural, mechanical, electrical, grading, drainage, paving, and outside utility services. Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Detailing and installation of all equipment and materials shall comply with the manufacturer's recommendations. The design analysis shall be for each discipline of work and shall include all features with the necessary calculations, tables, methods and sources used in determining equipment and material sizes and capacities, and shall provide sufficient information to support the design.

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SECTION 01330

SUBMITTAL PROCEDURES
(DESIGN/BUILD)

PART 1 -GENERAL

1.1 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.1.1 Design Submittals

Administrative Contracting Officer review is required for all design. The Government will review all 20%, 90%, 100% design submittals for conformance with the technical requirements of the solicitation. Section 01012, Design After Award, covers the design submittal and review process in detail.

1.1.2 Construction Submittals

1.1.2.1 Submittal Definitions

The submittals described below are those required and further described in other sections of the specifications. Submittals required by the CONTRACT CLAUSES and other nontechnical parts of the contract are not included in this section.

SD-01 Data

Work to be Performed by Contractor

Submittal Registers

Submittals which provide calculations, descriptions, or documentation regarding the work.

SD-04 Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

As-Built Drawings

Equipment Layout Drawings

SD-06 Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-07 Schedules

Progress Schedules

Schedules for Construction Contracts

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

SD-08 Statements

Accident Prevention Plan

Hazard Analysis Plan

Environmental Protection Plan

Submittal Procedures

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-09 Reports

Reports of inspections or tests, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified and test results shall be recorded.

SD-13 Certificates

Statements signed by responsible official of a manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements.

SD-14 Samples

Samples including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

SD-18 Records

Documentation to record compliance with technical or administrative requirements.

SD-19 Operation and Maintenance Manuals

Data which forms a part of an operation and maintenance manual.

1.1.2.2 Designer of Record Approval

Designer of Record approval is required for extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Contractor shall provide the Government the number of copies designated hereinafter of all Designer of Record approved submittals. The Government may review any or all Designer of Record approved submittals for conformance to the Solicitation and Accepted Proposal. The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.1.2.3 Deviations from Solicitation or Accepted Proposal.

*

Administrative Contracting Officer approval is required for any deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings".

1.1.2.4 Government Reviewed Extension of Design.

Government review is required for extension of design construction submittals, used to define contract conformity, and for deviation from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the Designer of Record design documents do not include enough detail to ascertain contract compliance. Government review is not required for extensions of design such as structural steel or reinforcement shop drawings.

1.1.2.5 Information Only.

All submittals not requiring Designer of **Record approval or Government Review** **will** be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

*

*

1.2 GOVERNMENT REVIEWED SUBMITTALS

The Contracting Officer's Representative conformance review of submittals shall not be construed as a complete check, but will indicate only that the design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Government Review or approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor, under the Design and CQC requirements of this contract, is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been reviewed for conformance, as applicable, by the Contracting Officer's Representative, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

*

1.3 SUBMITTALS REQUIRING RESUBMITTAL

The Contractor shall make all corrections required by the Contracting Officer's Representative, obtain the Designer of Record's approval, when applicable, and promptly furnish a corrected submittal in the form **and** number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring **"review" action, requiring both Design of Record approval and Government Review.** If the Contractor considers any correction indicated by the Government on the submittals to constitute a change to the contract, it shall promptly provide a notice in accordance with the Contract Clause "Changes" to the Contracting Officer's Representative.

1.4 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Design of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

PART 2-PRODUCTS

2.1 DESIGN SUBMITTALS

The Contractor shall **submit** design submittals in accordance with Section 01012 entitled "DESIGN AFTER AWARD".

2.2 CONSTRUCTION SUBMITTALS

2.2.1 General

The Contractor shall make submittals as required by the specifications. The Contracting Officer's Representative may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, the Contractor's Quality Control (CQC) representative, and the Designer of Record, as applicable, above shall check, approve and stamp, sign, and date each item, indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

2.2.2 Submittal Register (ENG Form 4288)

The Contractor's Designer(s) of Record shall develop a complete list of submittals during design. The Designer of Record shall identify required submittals in the specifications. Use the list to prepare ENG Form 4288 Submittal Register or a computerized equivalent. The list may not be all inclusive and additional submittals may be required by other parts of the contract. The Contractor is required to complete ENG Form 4288 (including columns "a" through "r") and submit to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and both submitted for approval.

2.2.3 Scheduling

Schedule those submittals covering component items forming a system or items that are interrelated to be coordinated and submitted concurrently. Also, schedule Certifications to be submitted with the pertinent drawings. Allow adequate time (a minimum of -calendar days exclusive of mailing time) and indicate on the register for Government review or approval. No delay damages or time extensions will be allowed for time lost in late submittals.

2.2.4 Transmittal Form (ENG Form 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be for transmitting both Government **reviewed** and information only submittals in accordance with the instructions on the reverse side of the form. The Government will furnish blank forms to the Contractor. Properly complete this form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

*

2.2.5 Submittal Procedure

Make submittals as follows:

2.2.5.1 Procedures

The Government will further discuss detailed submittal procedures with the Contractor at the pre-construction conference.

2.2.5.2 Deviations

On submittals for which the Contractor requests proposed deviations, check the column "variation" of ENG Form 4025. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. As stated above, the Contractor's Designer of Record's approval is required for any proposed deviation. The Government reserves the right to rescind inadvertent **acceptance** of submittals containing unnoted deviations. *

2.2.6 Control of Submittals

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register" so the material needed date is not threatened.

2.7 Government Conformance Review *

Upon completion of review of submittals by the Government, *

the Contracting Officer's Representative will retain *
two copies of the submittal and return two copies of the submittal to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be so identified and returned, as described above.

2.2.8 Information Only Submittals

Normally the Government will not return submittals for information only. No action of the Contracting Officer's Representative is required on information only submittals. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer's Representative from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe. The Government will retain two copies of information only submittals.

2.2.9 Stamps

Stamps used by the Contractor's Designer of Record and the Contractor's designed Quality Control person on the submittal data to certify that the submittal meets contract requirements shall be similar to the following (use two stamps for submittals reviewed by both):

CONTRACTOR	
(Firm Name)	
_____	Approved
_____	Approved with corrections as noted on submittal data and/or attached sheets(s).
SIGNATURE: _____	
TITLE: _____(DESIGNER OF RECORD)_____	
DATE: _____	

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-- End of Section --

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SECTION 01505

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SECTION 01505

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SCRAP MATERIAL

Materials specified to be removed and become the property of the Contractor are designated as scrap, and the Contractor, by signing this contract, hereby acknowledges that he has made due allowance for value, if any, of such scrap in the contract price. **See SECTION 01505, Paragraph 1.9, SPECIAL CONSTRUCTION PROCEDURES, regarding Salvage.**

1.2 WRITTEN GUARANTEES AND GUARANTOR'S LOCAL REPRESENTATIVE:

Prior to completion of the contract, the Contractor shall obtain and furnish to the Contracting Officer's representative written guarantees for all the equipment and/or appliances furnished under the contract. The Contractor shall furnish with each guarantee: The name, address, and telephone number of the guarantor's representative nearest to the location where the equipment and/or appliances are installed, who, upon request of the Using Service's representative, will honor the guarantee during the guaranty period and will provide the services prescribed by the terms of the guarantee.

1.3 PRICING OF CONTRACTOR-FURNISHED AND INSTALLED PROPERTY AND
GOVERNMENT-FURNISHED CONTRACTOR-INSTALLED PROPERTY:

The Contractor shall promptly furnish and shall cause any sub-contractor or supplier to furnish, in like manner, unit prices and descriptive data required by the Government for Property Record purposes of fixtures and equipment furnished and/or installed by the Contractor or sub-contractor, except prices do not need to be provided for Government-Furnished Property. This information shall be listed on RMS CQC Module furnished by the Government. See example forms at the end of this section.

1.4 TEMPORARY ELECTRIC WIRING:

(A) Temporary Power and Lighting:

The Contractor shall provide construction power facilities in accordance with the safety requirements of the National Electrical Code NFPA No. 70 and the SAFETY AND HEALTH REQUIREMENTS MANUAL EM 385-1-1. The Contractor, or his delegated subcontractor, shall enforce all the safety requirements of electrical extensions for the work of all subcontractors. All work shall be accomplished by skilled electrical tradesmen in a workmanlike manner, as approved by the Contracting Officer.

(B) Construction Equipment:

In addition to the requirements of EM 385-1-1, SAFETY AND HEALTH REQUIREMENTS MANUAL, all temporary wiring conductors installed for operation of construction tools and equipment shall be either Type TW or THW contained in metal raceways, or may be multiconductor cord. Temporary wiring shall be secured above the ground or floor in a workmanlike manner and shall not present an obstacle to persons or equipment. Open wiring may only be used outside of buildings, and then only in strict accordance with the provisions of the National Electrical Code.

(C) Circuit Protection:

In addition to the present requirements in EM 385-1-1 and the National Electrical Code, all 15 and 20-ampere receptacle outlets used for obtaining power during construction shall have ground fault circuit interrupters (GFCI) for personnel protection. Block and brick saws shall also be equipped with GFCI. The Contracting Officer may allow an exception to this requirement for circuits for concrete vibrators or circuits operating at other than 60 Hertz normal (in both cases an assured grounding program as described in the National Electrical Code, except utilizing the daily inspection frequency of the grounding means of such equipment, may be permitted). The assured grounding program will not be permitted as a substitute for usage of GFCI'S except as described above. All generator-powered 15- and 20-ampere, 60 Hertz receptacle outlets shall have GFCI'S, and shall be properly grounded. A testing means shall be provided which will impose a measured fault of 5 milliamperes, plus or minus 1 milliamperes, and result in tripping the GFCI unit.

1.5 UTILITIES NOT SHOWN:

If the Contractor encounters, within the construction limits of the entire project, utilities not shown on the plans and not visible as to the date of this contract and such utilities will interfere with construction operations, he shall immediately notify the Contracting Officer in writing to enable a determination by the Contracting Officer as to the necessity for removal or relocation. If such utilities are removed or relocated as directed by the Contracting Officer, the Contractor shall be entitled to equitable adjustment for any additional pertinent work or delay.

(B) The Prime Contractor's superintendent

The Prime Contractor's superintendent shall take an active role in enforcing the safety requirements by participation in safety conferences, hazard analysis (see below), tool box meetings, walk-through inspections, correction of violations, etc., and including that of the subcontractor's work.

(C) Job Hazard Analysis:

Based on the construction schedule, the Contractor shall submit a job hazard analysis of each major phase of work prior to entering that phase of activity. The analysis shall include major or high risk hazards, as well as commonly recurring deficiencies that might possibly be encountered for that operation, and shall identify proposed methods and techniques of accomplishing each phase in a safe manner. The Prime Contractor's superintendent shall take active participation in the Job Hazard Analysis, including the subcontractors' work. Prior to start of actual work a meeting shall be held with Prime Contractor, Government, and affected subcontractor to review the Job Hazard Analysis. In addition, job site meetings shall be held to indoctrinate foreman and workers on details of this analysis.

(D) Fire Prevention:

Twenty-four hours notice shall be given to the Contracting Officer for coordination with the Facility Fire Department prior to conducting any fire hazardous operation. Cutting or welding will be permitted only in areas that are or have been made fire safe. Where possible, all combustibles shall be located at least 35 feet horizontally from the work site. Where such location is impracticable, combustibles shall be protected with fire blankets and/or protective welding screens to prevent slag from running out of the work area.

Edges of covers at the floor shall be tight to prevent sparks from going under them. This precaution is also important at overlaps where several covers are used to protect a large pile. The Contractor shall not allow any welding/cutting or open flame operations in facilities that are protected by a wet pipe fire sprinkler or an automatic detection system, if the system is out of service. First priority of work will be to return the suppression/detection system to operational condition. Return the fire detection and/or suppression system back to an operational status (if possible) during periods that the facility is unoccupied, and at the end of the work day. The Contractor shall post a fire guard for a 24 hour period (or certify to the Fire Department that the facility is safe) after welding, cutting, and open flame operations in a facility when: (a) fire detection and suppression system can not be returned to service; (b) fire detection or suppression systems do not exist. Other fire prevention precautions shall be in accordance with the latest National Fire Codes.

(F) Recordkeeping/Reporting Requirements:

On all contract operations, the Prime Contractor shall be responsible for recording and reporting all accident exposure and experience incident work. (This includes exposure and experience of the prime contractor and his/her sub-contractor(s)). As a minimum these records shall include exposure work-hours and a log of occupational injuries and illnesses. (OSHA Form 200 or state equivalent as prescribed by 29 CFR 1904.5) Reference EM 385-1-1, 01.D.04.

(G) Accident Reporting:

In addition to the requirements for reporting accidents in accordance with EM 385-1-1, Section 1, the Prime Contractor will submit at the 50% point and 100% of project completion, a written summary of worker's compensation claims filed by workers on the project. The report will include all subcontractors. The main report covering the Prime Contractor claims will be certified as "correct and true" by the Contractor's compensation insurance carrier. The same certification will be required for subcontractor reports.

1.6 PLANNED UTILITY OUTAGES AND STREET CLOSURES:

All utility outages and street closures shall occur on the weekends and be of as short a duration as possible and shall be scheduled as far in advance as possible with the Contracting Officer, in no case less than (10) days before the outage or closure. The Contractor shall obtain in writing from the Contracting Officer a statement or schedule giving the permissible times of outages or closures for particular installations and the maximum time allowed for each. The Contractor shall strictly observe such schedules and will be held responsible for any violations.

(A) Street Closure:

The Contractor shall obtain approval in writing from the Contracting Officer before he can close any street or parking lot access. The request for closure shall be submitted in writing to the Contracting Officer 7 working days prior to planned closing and shall include the section to be closed and length of time of closure.

1.7 PERMITS:

(A) Excavation Permit:

The Contractor will be required to obtain an excavation permit on AF Form 103 from the Base Civil Engineer prior to performing any required excavation under this contract. The form shall be accompanied by a sketch showing size, depth, location, and extent of all excavation and trenching included in the contract. The completed form shall be submitted to the Base Civil Engineer with a copy to the Resident Engineer at least 10 working days prior to intended date of excavation. During the 10-day period the Base Civil Engineer and Base Communications Officer will make known to the Contractor by drawings, staking, or both, the location of all known buried utilities and communication lines. In these identified areas, only hand excavation will be permitted.

(B) Authority to Construct Permit

The new generators must qualify for a mandatory Authority to Construct Permit. Prior to purchasing the generators, Air Quality and Compliance shall be consulted in order to confirm that the new generators qualify for a mandatory Authority to Construct (ATC) Permit. Contact the Engineering and Technical Support Services (ETSS) contractor Computer Sciences Corporation (CSC) at (661) 277-6241/1467 for further information.

1.8 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER:

(A) This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSE, Section 00700, entitled "DEFAULT (FIXED-PRICE CONSTRUCTION)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

(B) The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities. Adverse weather days were determined based on the following four elements:

Precipitation greater than or equal to .10 inch.

Minimum temperature less than or equal to 32 degrees F.

Maximum temperature greater than or equal to 100 degrees F.

Surface wind greater than or equal to 20 MPH.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(13)	(12)	(08)	(03)	(00)	(00)	(00)	(01)	(00)	(02)	(10)	(15)

(C) Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. (ER 415-1-15, 31 OCT 89)

1.9 SPECIAL CONSTRUCTION PROCEDURES

(A) Base-wide identification of employees

The Contractor shall submit the following information on its company letterhead not less than 7 calendar days prior to the start of work on this project.

- (1) Project Name
- (2) Project Location
- (3) Project start date
- (4) Anticipated completion date
- (5) Name, nationality, and social security number of each employee who will be working on this project.
- (6) Registration numbers of all vehicles that will be required to enter the Base during the construction period.

(B) Use of fire hydrants

Any use of the fire hydrants will be coordinated one week in advance with the base fire department and airfield management.

(C) Cooperation with Others:

During the life of this contract, other Contractors will be performing operations in the general area where work under this contract is being performed. The Contractor shall cooperate with others in all respects wherever necessary for the better prosecution of the work. As far as practicable, all persons working in the vicinity shall have equal rights to the use of all transportation facilities and grounds within the limitations specified in the CONTRACT CLAUSES, Section 00700. The obligation of the Contractor under this contract shall include jointly planning and scheduling the work, on a cooperative basis, with other Contractors in order to minimize delays and interferences. The Contractor shall so arrange his operations as to not interfere with other work in progress. In case of dispute or disagreement regarding use of transportation and storage facilities and rights of access, the decision of the Contracting Officer shall govern.

(D) Landfills and Disposal Verification:

Prior to conclusion of the contract, receipt and approval of the Contractor's disposal submittal must be accomplished. For off-base disposal of demolition debris and hazardous waste the Contractor shall, as a minimum, submit the following to the Environmental Management Office, AFFTC/EM:

(1) Name and address of the proposed landfill to be used for disposal of construction project demolition waste

(2) Landfill class

(3) Material list with quantities to be disposed at the proposed landfill.

(E) Contractor shall coordinate the Staging Area with the Contracting Officer.

(F) Contractor shall be allowed to core drill the concrete walls of the TRACON. Any noise that will cause excessive noise on the Air Traffic Control Room floor will not be allowed during normal working hours. Any noise generation operation will have to be scheduled, on a case by case basis, in the early morning hours; and will then be limited to a four hour operation. All operations which will generate excessive noise shall be approved by the Air Traffic Manager.

(G) There is no lead based paint survey to provide for this facility. The Edwards base CE SABRE Shop has recently abated the asbestos in the existing large conference room. Edwards AFB will be signing the hazardous waste manifests as the generator. Edwards AFB Environmental office will be the reviewing authority for asbestos and lead abatement management plans per Mr. Larry Tolley from AFFTC/EM office (661) 277-2412.

1.10 HAZARDOUS NOISE AREA

Work area for this contract is located within a high noise area and can be hazardous to the human ear. The Contractor is responsible for providing adequate ear protection as may be required for Contractor's personnel at the job site.

1.11 WARRANTY OF CONSTRUCTION

(a). Performance Bond.

(1). It is understood that the Contractor's Performance Bond will remain effective throughout the life of all warranties and warranty extensions.

(2). In the event the Contractor or his designated representative fails to commence and diligently pursue any work required under the Warranty of Construction Section of the Technical Provisions within a reasonable time after receipt of written notification pursuant to the requirements thereof, the Contracting Officer shall have a right to demand that said work be performed under the Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Performance Bond, the Contracting Officer shall have the work performed by others, and after completion of the work, shall make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

(3). Warranty repair work which arises to threaten the health or safety of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be handled by the Contractor on an immediate basis as directed verbally by the Contracting Officer or his authorized representative. Written verification will follow verbal instructions. Failure of the Contractor to respond as verbally directed will be cause for the Contracting Officer or his authorized representative to have the warranty repair work performed by others and to proceed against the Contractor as outlined in the paragraph b. above.

(b). Pre-Warranty Conference. Prior to contract completion and at a time designated by the Contracting Officer or his authorized representative, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of SECTION 00700, Paragraph, WARRANTY OF CONSTRUCTION, of this specification. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer or his authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue warranty work action on behalf of the Contractor. This single point of contact will be located within the local service area of the warranted construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of his responsibilities in connection with Section 00700, Paragraph, WARRANTY OF CONSTRUCTION.

(c). Equipment Warranty Identification Tags. The Contractor shall provide warranty identification tags on all equipment installed under this contract.

(d). Contractor's Response to Warranty Service Requirements. The following warranty service requirements are applicable to this contract. Following notification by the Contracting Officer or the Contracting Officer's Representative the Contractor shall respond to a warranty service requirement identified by the Contracting Officer's Representative in accordance with the "Warranty Service Priority List" of this program. This list prioritizes warranty work into the categories:

First Priority 1A Perform on site inspection to evaluate situation, determine course of action, initiate work within 24 hours and work continuously to completion or relief.

Second Priority 1B Perform on site inspection to evaluate situation, determine course of action, initiate work within 48 hours and work continuously to completion of relief.

Third Priority All other work to be initiated within 5 work days and work continuously to completion or relief.

The "Warranty Service Priority List" shall be compiled by the Contractor and approved by the Contracting Officer.

Should parts be required to complete the work and the parts are not immediately available the Contractor shall have a maximum of 12 hours after arrival at the job site to provide the Contracting Officer's Representative with firm written proposals for emergency alternatives and temporary repairs for Government participation with the Contractor to provide emergency relief until the required parts are available on site for the Contractor to perform permanent warranty repair. The Contractor's proposals shall include a firm date and time that the required parts shall be available on site to complete the permanent warranty repair. The Contracting Officer's Representative will evaluate the proposed alternatives and negotiate the alternative considered to be in the best interest of the Government to reduce the impact of the emergency condition. Alternatives considered by the Contracting Officer's Representative will include the alternative for the Contractor to "Do Nothing" while waiting until the required parts are available to perform permanent warranty repair. Negotiating a proposal which will require Government participation and the expenditure of Government funds shall constitute a separate procurement action by the using service.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

SECTION 13280
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ASBESTOS ABATEMENT
EDWARDS AFB BUILDING TRACON RENOVATION

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SECTION 13280

ASBESTOS ABATEMENT

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.1.1 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2	(1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems
ANSI Z87.1	(1991) Occupational and Educational Eye and Face Protection
ANSI Z88.2	(1992) Practices for Respiratory Protection

1.1.2 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1331	(1989; R1995) Surface and Interfacial Tension of Solutions of Surface-Active Agents
ASTM D 4397	(1984; R 1989) Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
ASTM E 1368	(1990) Visual Inspection of Asbestos Abatement Projects

1.1.3 CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926	Section .1101, Asbestos
40 CFR Part 61	National Emissions Standards for Hazardous Air Pollutants, Subpart M (Asbestos)
40 CFR 763	Asbestos-Containing Materials in Schools, Subpart E

1.1.4 COMPRESSED GAS ASSOCIATION (CGA)

CGA G-7	(1989; 4th Ed) Compressed Air for Human Respiration
CGA G-7.1	(1989; 3rd Ed) Commodity Specification for Air

1.1.5 ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 560/5-85-024	(1985) Guidance for Controlling Asbestos Containing Materials in Buildings
EPA 340/1-90-018	(1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance
EPA 340/1-90-019	(1990) Asbestos/NESHAP Adequately Wet Guidance
EPA 20T-2003	(1990) Managing Asbestos In Place

1.1.6 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(1994) Portable Fire Extinguishers
NFPA 70	(1996) National Electrical Code
NFPA 90A	(1989) Installation of Air Conditioning and Ventilating Systems
NFPA 701	(1996) Methods of Fire Test for Flame-Resistant Textiles and Films

1.1.7 NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH-01	(1994) Manual of Analytical Methods
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1.1.8 NATIONAL INSTITUTE FOR HEALTH (NIH)

Pub No. 89-1647	(1989) Smoking Cessation (self help)
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1.1.9 UNDERWRITERS LABORATORIES (UL)

UL 586	(Oct 18, 1990; Rev Apr 1995) High-Efficiency, Particulate, Air Filter Units
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1.1.10 UNITED STATES ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(Sep 1996) Safety and Health Requirements Manual
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1.1.11 DEPARTMENT OF THE ARMY

AR 200-1	Environmental Protection and Enhancement
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1.2 DEFINITIONS

1.2.1 **Adequately Wet:** A term defined in 40 CFR 61, Subpart M, and EPA 340/1-90-019 that means to sufficiently mix or penetrate with liquid to prevent the release of particulate. If visible emissions are observed coming from asbestos-containing material (ACM), then that material has not

been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.

1.2.2 Aggressive Method: Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact asbestos-containing material (ACM).

1.2.3 Amended Water: Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.

1.2.4 Asbestos: Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

1.2.5 Asbestos-Containing Material (ACM): Any materials containing more than one percent asbestos.

1.2.6 Asbestos-Containing Construction Material (ACCM): Any materials containing more than one tenth of one percent asbestos.

1.2.7 Authorized Person: Any person authorized by the Contractor and required by work duties to be present in the regulated areas.

1.2.8 Building Inspector: Individual who inspects buildings for asbestos and has EPA Model Accreditation Plan (MAP) "Building Inspector" training accreditation required by 40 CFR 763 Subpart E, Appendix C and is a CAC.

1.2.9 Certified Asbestos Consultant (CAC): means an individual who is certified by the state of the California to contract for designing asbestos projects, inspecting buildings for asbestos, collecting asbestos samples, writing management plans, monitoring abatement contractors, or performing clearance samples. This does not apply to individuals who perform these services "in house".

1.2.10 Certified Industrial Hygienist (CIH): An Industrial Hygienist certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

1.2.11 Class I Asbestos Work: Activities defined by OSHA involving the removal of thermal system insulation (TSI), Presumed Asbestos Containing Material (PACM) and surfacing ACM.

1.2.12 Class II Asbestos Work: Activities defined by OSHA involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos- containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Certain "incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work. In California these excluded materials are dealt with

as a non-classified type of work activity in 8 CCR 1529 (g)(11).

1.2.13 Class III Asbestos Work: Activities defined by OSHA that involves repair and maintenance operations, where ACM, including TSI and surfacing ACM, is likely to be disturbed. Operations may include drilling, abrading, cutting a hole, cable pulling, crawling through tunnels or attics and spaces above the ceiling, where asbestos is actively disturbed or asbestos-containing debris is actively disturbed as long as all debris generated fits into a 60" waste container.

1.2.14 Class IV Asbestos Work: Maintenance and custodial construction activities during which employees contact but do not disturb ACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities. This may include dusting surfaces where ACM waste and debris and accompanying dust exists and cleaning up loose ACM debris from TSI or surfacing ACM following construction.

1.2.15 Clean room: An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

1.2.16 Competent Person: In addition to one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them, one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them: in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA Model Accreditation Plan (40 CFR 763) for supervisor, or it's equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2).

1.2.17 Contractor/Supervisor: Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C.

1.2.18 Critical Barrier: One or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

1.2.19 Decontamination Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

1.2.20 Demolition: The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

1.2.21 Disposal Bag: 6 mil thick leak-tight plastic bag, pre-labeled in accordance with 29 CFR

1926.1101, used for transporting asbestos waste from containment to disposal site.

1.2.22 Disturbance: Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM so disturbed exceed that which can be contained in one glove bag or waste disposal bag which shall not exceed 60 inches in length and width.

1.2.23 Equipment Room or Area: An area adjacent to the regulated area used for the decontamination of employees and their equipment.

1.2.24 Employee Exposure: That exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

1.2.25 Fiber: A fibrous particulate, 5 micrometers or longer, with a length-to-width ratio of at least 3 to 1.

1.2.26 Friable ACM: A term as defined in 40 CFR 61, Subpart M and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by PLM, verify the asbestos content by point counting using PLM.

1.2.27 Glove bag: Not more than a 60 x 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.

1.2.28 High-Efficiency Particulate Air (HEPA) Filter: A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

1.2.29 Homogeneous Area: An area of surfacing material or thermal system insulation that is uniform in color and texture.

1.2.30 Industrial Hygienist: A professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.

1.2.31 Intact: ACM which has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Removal of "intact" asphaltic, resinous, cementitious products does not render the ACM non-intact simply by being separated into smaller pieces.

1.2.32 **Model Accreditation Plan (MAP):** USEPA training accreditation requirements for persons who work with asbestos specified at 40 CFR 763, Subpart E, Appendix C.

1.2.33 **Modification:** A changed or altered procedures, material or component of a control system, which replaces a procedure, material or component of a required system.

1.2.34 **Negative Exposure Assessment:** A demonstration by the Contractor that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).

1.2.35 **NESHAP:** National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61 Subpart M.

1.2.36 **NIOSH:** National Institute of Occupational Safety and Health.

1.2.37 **Nonfriable ACM:** A NESHAP term as defined in 40 CFR 61 Subpart M and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

1.2.38 **Nonfriable ACM (Category I):** A NESHAP term as defined in 40 CFR 61, Subpart M and EPA 340/1-90-018 that means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy.

1.2.39 **Nonfriable ACM (Category II):** A NESHAP term as defined in 40 CFR 61, Subpart M and EPA 340/1-90-018 that means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos, as determined using the methods specified in 40 CFR 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

1.2.40 **Permissible Exposure Limits (PELs):**

a. **PEL-Time weighted average(TWA):** Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an eight (8) hour time weighted average (TWA), as determined by the method prescribed in 29 CFR 1926.1101, Appendix A, or the current version of NIOSH analytical method 7400.

b. **PEL-Excursion limit:** An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of thirty (30) minutes as determined by the method prescribed in 29 CFR 1926.1101, Appendix A, or the current version of NIOSH analytical method 7400.

1.2.41 Presumed Asbestos Containing Material (PACM): An OSHA term defined in 29 CFR 1926.1101 as thermal system insulation and surfacing material found in buildings constructed no later than 1980. The material is "presumed" to contain asbestos unless it is demonstrated not to contain asbestos through bulk sampling in accordance with 40 CFR 763 Section .86. PACM includes flooring material and associated mastic and backing and TSI.

1.2.42 Regulated Area: An OSHA term as defined in 29 CFR 1926.1101 that means a regulated area established by the Contractor to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the permissible exposure limit. This area may be contained and controlled either by an enclosed containment (full containment area, single or double bulkhead containment area, mini-containment area), modified containment, glove bag or outdoor techniques, where asbestos containing materials (ACM) operations are performed and isolated by physical boundaries to prevent the spread of ACM and control access to authorized persons. A full containment, single or double bulkhead containment area, mini-containment area, modified containment, and glove bag work area is isolated within a containment enclosure in which ACM operations are performed. An outdoor regulated work area is not isolated within a containment enclosure, but is otherwise secured by means of physical barriers, boundary warning tape, and signage, etc., to control access by unauthorized persons.

1.2.43 Regulated Asbestos-Containing Material (RACM): An EPA NESHAP term defined as Friable ACM, Category I nonfriable ACM that has become friable; Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or Category II nonfriable ACM that has a high probability of becoming or has been crumbled, pulverized, or reduced to powder by the forces expected to act it in the course of demolition or renovation operations.

1.2.44 Removal: All operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.

1.2.45 Repair: Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM attached to structures or substrates. (If the amount of asbestos so "disturbed" cannot be contained in one standard glove bag (60 inch x 60 inch) or waste bag, Class I precautions are required)

1.2.46 Spills/Emergency Cleanups: Cleanup of sizable amounts of asbestos waste and debris which has occurred, for example, when water damage occurs in a building, and sizable amounts of ACM are dislodged. A Competent Person evaluates the site and ACM to be handled, and based on the type, condition and extent of the dislodged material, classifies the cleanup as Class I, II, or III. Only if the material was intact and the cleanup involves mere contact of ACM, rather than disturbance, could there be a Class IV classification.

1.2.47 Surfacing ACM: Asbestos-containing material which contains more than 1% asbestos and is

sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

1.2.48 Thermal system insulation (TSI) ACM: ACM which contains more than 1% asbestos and is applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain or water condensation.

1.2.49 Transite: A generic name for asbestos cement wallboard and pipe.

1.2.50 Worker: Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926.1101 to include EPA Model Accreditation Plan (MAP) "Worker" training accreditation required by 40 CFR 763, Subpart E, Appendix C, if required by the OSHA Class of work to be performed or by the state where the work is to be performed.

1.3 DESCRIPTION OF WORK

1.3.1 General: The work covered by this section includes the handling of asbestos-containing materials (ACM) which are encountered during renovation activities associated with this project at **Edwards AFB Building 2580 TRACON** and describes procedures and equipment required to protect workers from contact with airborne asbestos fibers and ACM dust and debris. Activities include OSHA Class I and Class II work operations involving ACM. The work also includes containment, storage, transportation and disposal of the generated ACM wastes. More specific operational procedures shall be detailed in the required Accident Prevention Plan and its subcomponents, the Asbestos Hazard Abatement Plan (AHAP) and Activity Hazard Analyses (AHAs) required in paragraph SAFETY AND HEALTH PROGRAM. Not all asbestos will be removed from each building so the contractor will have to take care when performing work to not impact asbestos containing materials that will remain.

1.3.1.1 Abatement Work Tasks: The specific ACM to be abated is identified on the detailed plans and project drawings. A summary of work task data elements for each individual ACM abatement work task to include the appropriate RESPONSE ACTION DETAIL SHEET (item to be abated and methods to be used) and SET-UP DETAIL SHEETS (containment techniques to include safety precautions and methods) is included in Table 1, "Individual Work Task Data Elements" at the end of this section.

1.3.2 Unexpected Discovery of Asbestos: For any previously untested building components suspected to contain asbestos and located in areas impacted by the work, the Contractor shall notify the Contracting Officer (CO) who will have the option of ordering up to 10 bulk samples to be obtained at the Contractor's expense and delivered to a laboratory accredited under the National Institute of Standards and Technology (NIST) "National Voluntary Laboratory Accreditation Program (NVLAP)" and analyzed by PLM at no additional cost to the government. Any additional components identified as ACM that have been approved

by the CO for removal shall be removed by the Contractor and will be paid for by an equitable adjustment to the contract price under the CONTRACT CLAUSE entitled "changes". Sampling activities undertaken to determine the presence of additional ACM shall be conducted by personnel who have successfully completed the EPA Model Accreditation Plan (MAP) "Building Inspector" training course required by 40 CFR 763 Subpart E, Appendix C.

1.3.3 Ordinance and Explosives: All employees must go through the base ordinance and explosives course before working on site. If any of these materials are discovered all work in the area will stop and the base will be notified of the object.

1.4 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

1.4.1 SD-01 Data

1.4.1.1 Materials and Equipment; FIO. Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics and any other pertinent information. Test results and certificates from the manufacturer of encapsulants substantiating compliance with performance requirements of these specifications. Material Safety Data Sheets for all chemicals to be used on-site in the same format as implemented in the Contractor's HAZARD COMMUNICATION PROGRAM. Data shall include, but shall not be limited to, the following items:

- a. High Efficiency Filtered Air (HEPA) local exhaust equipment
- b. Vacuum cleaning equipment
- c. Pressure differential monitor for HEPA local exhaust equipment
- d. Air monitoring equipment
- e. Respirators
- f. Personal protective clothing and equipment
- g. Glove Bag
- h. Duct Tape
- I. Disposal Containers
- j. Sheet Plastic
- k. Wetting Agent
- l. Strippable Coating
- m. Prefabricated Decontamination Unit(s)
- n. Other items
- o. Chemical encapsulant
- p. Chemical encasement materials
- q. Material Safety Data Sheets (for all chemicals proposed)
- r. Rotameter calibration curve

1.4.2 SD-04 Drawings

Site Layout; GA. Descriptions, detail project drawings, site layout to include worksite containment area techniques as prescribed on applicable SET-UP DETAIL SHEETS, local exhaust ventilation system locations, decontamination and load-out units, other temporary waste storage facility, access tunnels, location of temporary utilities (electrical, water, sewer) and boundaries of each asbestos regulated work area.

1.4.3 SD-08 Statements

1.4.3.1 Qualification; FIO. A written report providing evidence of qualification for personnel, facilities and equipment assigned to the work as required by paragraph QUALIFICATIONS.

1.4.3.2 Training Material; FIO. A copy of the written project site-specific training material as indicated in 29 CFR 1926 Section .1101 that will be used to train all on-site employees. This training document shall be signed by the Contractor's Designated IH and Competent Person.

1.4.3.3 Certification of Medical Requirements; FIO. Physician written result as required in paragraph MEDICAL REQUIREMENTS

1.4.3.4 Encapsulants; GA. Certificates stating that encapsulants meet the applicable specified performance requirements.

1.4.4 SD-09 Reports

1.4.4.1 Exposure Assessments, Air Monitoring Results and Documentation; GA
Initial exposure assessments, Negative exposure assessments, air-monitoring results and documentation required by paragraph EXPOSURE ASSESSMENT AND AIR MONITORING.

1.4.4.2 Pressure Differential Recordings FIO. Pressure differential recordings required by paragraph LOCAL EXHAUST SYSTEM.

1.4.4.3 Licenses, Permits and Notifications; GA. Licenses, permits and notifications required by paragraph LICENSES, PERMITS AND NOTIFICATIONS.

1.4.5 SD-13 Certificates

Vacuum, Filtration and Ventilation Equipment; FIO.
Manufacturer's certifications showing compliance with ANSI Z9.2 for:

- a. Vacuums.
- b. Water filtration equipment.

- c. Ventilation equipment.
- d. Other equipment required to contain airborne asbestos fibers.

1.4.6 SD-18 Records

1.4.6.1 Respirator Program; GA. Records of the respirator program as required by paragraph RESPIRATORY PROTECTION.

1.4.6.2 Asbestos Waste Shipment; GA. Waste Shipment Records as required by paragraph, CLEAN-UP AND DISPOSAL.

1.4.6.3 Waste Disposal, Weigh Bills, Delivery Tickets; FIO

1.5 QUALIFICATIONS

1.5.1 Written Qualifications and Organization Report: The Contractor shall submit a written qualifications and organization report providing evidence of qualifications of the Contractor, Contractor's on-site project manager, designated Competent Person, supervisors and workers; designated independent IH (person assigned to project and firm name); independent testing laboratory (include name of firm, principal and analyst(s) who will perform analyses); all subcontractors to be used to include disposal transportation and disposal facility firms, subcontractor supervisors, subcontractor workers; and any others assigned to perform asbestos abatement and support activities. The report shall include an organization chart showing the Contractor's staff organization for this project by name and title, chain of command and reporting relationship with all subcontractors. The report shall be signed by the Contractor, the Contractor's on-site project manager, designated Competent Person, designated independent IH, designated testing laboratory and the principals of all subcontractors to be used. The Contractor shall include the following statement in the report: By signing this report I certify that the personnel I am responsible for during the course of this project fully understand the contents of 29 CFR 1926 Section .1101 and 8 CCR 1529, 40 CFR Part 61 Subpart M, and the Federal, state and local requirements specified in paragraph REGULATORY REQUIREMENTS for those asbestos abatement activities that they will be involved in.

1.5.1.1 Qualifications: The Contractor shall designate in writing, personnel meeting the following qualification to perform asbestos abatement activities and shall include the information requested in the Qualifications and Organization Report:

a. Designated Competent Person: The name, address, telephone number, and resume of the Contractors designated Competent Person. Evidence that the full-time designated Competent Person is qualified in accordance with 29 CFR 1926 Sections .32 and .1101, 8 CCR 1529, has EPA Model Accreditation Plan (MAP) Contractor/Supervisor training accreditation required by 40 CFR 763 Subpart E, Appendix C, is a Certified Asbestos Consultant as specified in 8 CCR 1529, and is experienced in the administration and supervision of asbestos abatement projects, including exposure assessment and

monitoring, work practices, abatement methods, protective measures for personnel, set up and inspection of asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, notification of other employees on-site, etc. The duties of the Competent Person shall include the following: controlling entry to and exit from the regulated area; supervising any employee exposure monitoring required by 29 CFR 1926 Section .1101 and 8 CCR 1529; ensuring that all employees working within a regulated area wear the appropriate personal protective equipment (PPE), are trained in the use of appropriate methods of exposure control, and use the hygiene facilities and decontamination procedures specified; and ensuring that engineering controls in use are in proper operating conditions and are functioning properly. This Designated Competent Person shall be responsible for compliance with applicable Federal, state and local requirements, the Contractor's APP and Asbestos Hazard Abatement Plan. The designated on-site Competent Person shall provide, and the Contractor shall submit, the Contractor/Supervisor course completion and the most recent certificate for required refresher training with the employee A Certificate of Worker Acknowledgement required by this paragraph. The Contractor shall submit evidence that this person has a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA competent person requirements. The designated competent person shall be on-site at all times during the conduct of this project.

b. Designated Project and Other Supervisors: The name, address, telephone number, and resume of the designated on-site Project Supervisor and other supervisors, who have responsibility to implement the Accident Prevention Plan including the Asbestos Hazard Abatement Plan and Activity Hazard Analyses, the authority to direct work performed under this contract and verify compliance and has EPA Model Accreditation Plan (MAP) Contractor/Supervisor training accreditation required by 40 CFR 763 Subpart E, Appendix C. The designated on-site Project Supervisor and other supervisors shall provide, and the Contractor shall submit, the Contractor/Supervisor course completion and the most recent certificate for required refresher training with the employee Certificate of Worker Acknowledgement required by this paragraph. The Contractor shall submit evidence that the designated Project Supervisor has a minimum of 2 years of on-the-job asbestos abatement experience relevant to project supervisor responsibilities and that any other supervisors have a minimum of 1 year on-the job asbestos abatement experience comensurate with the responsibilities they will have on this project.

c. Designated Industrial Hygienist: The name, address, telephone number, resume and other information specified below for the Industrial Hygienist (IH) selected to prepare the Contractor's Asbestos Hazard Abatement Plan, prepare and perform training, direct air monitoring and assist the Contractor's Competent Person in implementing and ensuring safety and health requirements are complied with during the performance of all required work. The Designated IH shall be a person who is board certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH), has EPA Model Accreditation Plan (MAP) Contractor/Supervisor training accreditation required by 40 CFR 763 Subpart E, Appendix C, is a Certified Asbestos Consultant as specified in 8 CCR 1529, and has a minimum of 2 years of comprehensive experience in planning and overseeing asbestos abatement activities. The designated IH shall provide, and the Contractor shall submit, the Contractor/Supervisor

course completion and the most recent certificate for required refresher training with the employee Certificate of Worker Acknowledgement required by this paragraph. The designated IH shall be completely independent from the Contractor and shall not be an employee of the Contractor or be an employee or principal of a firm recognized by Federal, state, or local regulations that would constitute a business relationship that would not be considered independent. A copy of the designated IH's current valid ABIH Certification shall be included. The designated IH shall visit the site at least twice per month for the duration of asbestos activities and be available for emergencies. In addition, the designated IH shall prepare and the Contractor shall submit the name, address, telephone numbers and resumes of additional IH's and industrial hygiene technicians (IHT) who will be assisting the designated IH in performing on-site tasks. IHs and IHTs supporting the Designated IH shall have a minimum of 2 full years of practical on-site asbestos abatement experience. The formal reporting relationship between the designated IH and the support IHs and IHTs, the designated Competent Person, and the Contractor shall be indicated. The resume of each supporting IH and IHT shall be signed by the designated IH and Contractor. The resume of each designated IH, supporting IH and IHT staff shall be signed by the individual for whom the resume was prepared.

d. Asbestos Abatement Workers: Asbestos abatement workers shall meet the requirements contained in 29 CFR 1926 Section .1101 and 8 CCR 1529, 40 CFR 61 Subpart M and other applicable Federal, state and local requirements. Worker training documentation shall be provided as required on the Certificate of Workers Acknowledgment in this paragraph.

e. Worker Training and Certification of Worker Acknowledgment: Training documentation is required for each employee who will perform OSHA Class I and Class II asbestos abatement operations. Such documentation shall be submitted on a Contractor generated form entitled Certificate of Workers Acknowledgment to be completed for each employee in the same format and containing the same information as the example certificate at the end of this section. All training course completion certificates (initial and most recent update refresher) required by the information checked on the form shall be attached.

f. Physician: The name, medical qualifications, address, telephone number and resume of the physician who will or has performed the medical examinations and evaluations of the persons who will conduct the asbestos abatement work tasks. The physician must be currently licensed by the state where the workers will be or have been examined, have expertise in pneumoconioses and shall be responsible for the determination of medical surveillance protocols and for review of examination/test results performed in compliance with 29 CFR 1926 Section .1101 and paragraph MEDICAL REQUIREMENTS. The physician shall be familiar with the site's hazards and the scope of this project. The medical consultant's name, qualifications, and knowledge of the site's conditions and proposed activities shall be included in the Accident Prevention Plan (APP).

g. First Aid and CPR Trained Persons: The names of at least two persons who are currently trained in first aid and CPR by the American Red Cross or other approved agency shall be designated and shall be on-site at all times during site operations. They shall be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910 Section .1030 and shall be

included in the Contractor's Bloodborne Pathogen Program. These persons may perform other duties but shall be immediately available to render first aid when needed. Provide a copy of each designated persons current valid First Aid and CPR certificate.

h. Independent Testing Laboratory: The name, address and telephone number of the independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by Federal, state or local regulations. The independent testing laboratory shall perform sample analyses and report the results of at least five percent (5%) of all samples. Written verification of the following criteria, signed by the testing laboratory principal and the Contractor shall be submitted:

(1) Phase contrast microscopy (PCM): The laboratory is fully equipped and proficient in conducting phase contrast microscopy (PCM) of airborne samples using the methods specified by 29 CFR 1926 Section .1101 and 8 CCR 1529, OSHA method ID-160, the most current version of NIOSH-01 Method 7400, and NIOSH Method 7402, transmission electron microscopy (TEM); the laboratory is currently certified and judged proficient in counting airborne asbestos samples by PCM by successful participation within the past year in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program; the name of each selected microscopist who will analyze airborne samples by PCM with verified documentation of their proficiency to conduct PCM analyses by being judged proficient in counting samples as a current participating analyst in the AIHA PAT Program, and having successfully completed the Asbestos Sampling and Analysis course (NIOSH 582 or equivalent with a copy of course completion certificate provided; when the PCM analysis is to be conducted on-site, documentation shall be provided certifying that the on-site analyst meets the same requirements.

(2) Polarized light microscopy (PLM): The laboratory is fully equipped and proficient in conducting polarized light microscopy (PLM) analyses of suspect ACM bulk samples in accordance with 40CFR 763 Subpart E, Appendix E; the laboratory is currently accredited by the National Institute for Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos analysis and will use analysts (provide name(s) with demonstrated proficiency to conduct PLM to include its application to the identification and quantification of asbestos content.

(3) Transmission electron microscopy (TEM): The laboratory is fully equipped and proficient in conducting transmission electron microscopy (TEM) analysis of airborne samples using the mandatory method specified by 40 CFR 763, Subpart E, Appendix E; the laboratory is currently accredited by the National Institute for Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for airborne sample analysis of asbestos by TEM; the laboratory will use analysts (provide name(s) that are currently evaluated as competent with demonstrated proficiency under the NIST NVLAP for airborne sample analysis of asbestos by TEM). The laboratory is proficient in conducting analysis using an improved test method entitled "Method for the Determination of Asbestos in Bulk Building Materials" (EPA/600/R-93). This method provides more precise analytical results especially at low asbestos concentration, enhanced analysis of floor tiles and bulk materials where multiple layers are present.

(4) PCM/TEM: The laboratory is fully equipped and each analyst (provide name) possesses demonstrated proficiency in conducting phase contrast microscopy and transmission electron microscopy analysis of airborne samples using NIOSH-01 Method 7400 PCM and NIOSH-01 Method 7402 (TEM confirmation of asbestos content of PCM results) from the same filter.

i. Disposal Facility, Transporter: Provide written evidence that the landfill to be used is approved for asbestos disposal by the USEPA, state and local regulatory agencies. Copies of signed agreements between the Contractor, and each subcontractor to include transporters and the asbestos waste disposal facility to accept and dispose of all asbestos containing waste generated during the performance of this contract will be provided. Qualification shall be provided for each subcontractor or transporter to be used, indicating previous experience in transport and disposal of asbestos waste to include all required state and local waste hauler requirements for asbestos. The contractor and transporters shall meet the DOT requirements of 49 CFR 171, 172, and 173 as well as registration requirements of 49 CFR 107 and other applicable state or local requirements. The disposal facility shall meet the requirements of 40 CFR 61 Sections .154 or .155 as required in 40 CFR 61 Section .150(b) and other applicable state or local requirements.

1.5.2 Federal, State or Local Citations on Previous Projects: The Contractor and all subcontractor's shall submit a statement, signed by an officer of the company, containing a record of any citations issued by Federal, State or local regulatory agencies relating to asbestos activities (include projects, dates, and resolutions); a list of penalties incurred through non-compliance with asbestos project specifications including liquidated damages, overruns in scheduled time limitations and resolutions; and situations in which an asbestos-related contract has been terminated (include projects, dates, and reasons for terminations). If there are none, there will be a negative declaration signed by an officer of the company.

1.6 REGULATORY REQUIREMENTS

In addition to detailed requirements of this specification, work performed under this contract shall comply with EM 385-1-1, applicable Federal, state, and local laws, ordinances, criteria, rules and regulations regarding handling, storing, transporting, and disposing of asbestos waste materials. This includes, but is not limited to, Occupational Safety and Health Administration (OSHA) standards, 29 CFR 1926, 29 CFR 1926 Section .1101, 40 CFR 61 Subpart M, 8 CCR 1529, and 40 CFR 763. The Contractor must assure that the appropriate counties regulations are followed for building notification requirements. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.7 SAFETY AND HEALTH PROGRAM AND PLANS

The Contractor's Designated IH shall develop and submit a written comprehensive site-specific Accident Prevention Plan (APP) at least 30 days prior to the preconstruction conference in conjunction with an Injury

and Illness Prevention Program in Accordance with 8 CCR 1509. The APP shall address all requirements of EM 385-1-1, Appendix A covering on-site work to be performed by the Contractor and all subcontractors. The APP shall incorporate an Asbestos Hazard Abatement Plan (AHAP), and Activity Hazard Analyses (AHAs) as separate appendices into one site specific APP document. Any portions of the Contractor's overall Safety and Health Program (SHP) that are referenced in the APP, e.g., respirator program, hazard communication program, confined space entry program, etc., shall be included as appendices to the APP. The plan shall take into consideration all the individual asbestos abatement work tasks identified in Table 1. The plan shall be prepared by, signed and sealed including certification number and dated by the Contractor's Designated IH, Competent Person, and Project Supervisor.

1.7.1 The AHAP Appendix: The AHAP appendix to the APP shall include, but not be limited to:

- a. The personal protective equipment to be used;
- b. The location and description of asbestos regulated work areas including clean and dirty areas, access tunnels, decontamination unit (clean room, shower room, equipment room, storage areas such as load-out unit);
- c. Initial exposure assessment in accordance with 29 CFR 1926 Section .1101 and 8 CCR 1529 ;
- d. Level of supervision;
- e. Method of notification of other employers at the worksite;
- f. Abatement method to include containment and control procedures;
- g. Interface of trades involved in the construction;
- h. Sequencing of asbestos related work;
- i. Storage and disposal procedures and plan;
- j. Type of wetting agent and asbestos encapsulant to be used;
- k. Location of local exhaust equipment;
- l. Air monitoring methods (personal, environmental and clearance);
- m. Bulk sampling and analytical methods (if required);
- n. A detailed description of the method to be employed in order to control the spread of ACM wastes and airborne fiber concentrations;
- o. Fire and medical emergency response procedures; and
- p. The security procedures to be used for all asbestos regulated work areas.

1.7.2 The AHA Appendix: AHAs, for each major phase of work, shall be submitted and updated during the project. The AHA format shall be in accordance with EM 385-1-1 (Figure 1-1). The analysis shall define the activities to be performed for a major phase of work, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the AHA has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the government on-site representatives. The AHA shall be continuously reviewed and when appropriate modified to address changing site conditions or operations.

1.8 PRECONSTRUCTION CONFERENCE AND ON-SITE SAFETY

The Contractor and the Contractor's Designated Competent Person, Project Supervisor, and Designated IH shall meet with the Contracting Officer prior to beginning work at a safety preconstruction conference to discuss the details of the Contractor's submitted Accident Prevention Plan (APP) to include the Asbestos Hazard Abatement Plan (AHAP) and Activity Hazard Analyses (AHAs) appendices. Deficiencies in the APP will be discussed and the APP shall be revised to correct the deficiencies and resubmitted for acceptance. Any changes required in the specification as a result of the APP shall be identified specifically in the plan to allow for free discussion and acceptance by the Contracting Officer prior to the start of work.

On-site work shall not begin until the APP has been accepted. A copy of the written APP shall be maintained on-site. Changes and modifications to the accepted APP shall be made with the knowledge and concurrence of the Designated IH, the Project Supervisor, Designated Competent Person, and the Contracting Officer. Should any unforeseen hazard become evident during the performance of the work, the Designated IH shall bring such hazard to the attention of the Project Supervisor, Designated Competent Person, and the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to re-establish and maintain safe working conditions in order to safeguard on-site personnel, visitors, the public, and the environment. Once accepted by the Contracting Officer, the APP, including the AHAP and AHAs will be enforced as if an addition to the specification. Disregard for the provisions of this specification or the accepted APP shall be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

1.9 SECURITY

Each asbestos regulated work area shall be secured so that no unauthorized personnel can possibly enter until the area has been cleared for entry by the contractor. A log book shall be kept documenting entry into and out of the asbestos regulated work area. Entry into asbestos regulated work areas shall only be by personnel authorized by the Contractor and Contracting Officer. Personnel authorized to enter asbestos regulated work areas shall be trained, medically evaluated and wear the personal protective equipment, as required by this specification, for the specific asbestos regulated work area to be entered.

1.10 MEDICAL REQUIREMENTS

Medical requirements shall conform to 29 CFR 1926 Section .1101 and 8 CCR 1529.

1.10.1 Medical Examinations

Before being exposed to airborne asbestos fibers, workers shall be provided with a medical examination as required by 29CFR 1926 Section .1101 and other pertinent state or local requirements. This requirement must have been satisfied within the last 12 months. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. X-ray films of asbestos workers shall be identified to the consulting radiologist and medical record jackets shall be marked with the word "asbestos."

1.10.1.1 Information Provided to the Physician: The Contractor shall provide the following information in

writing to the examining physician:

- a. A copy of 29 CFR 1926 Section .1101 and 8 CCR 1529 and Appendices D, E, G, and I;
- b. A description of the affected employee's duties as they relate to the employee's exposure;
- c. The employee's representative exposure level or anticipated exposure level;
- d. A description of any personal protective and respiratory equipment used or to be used; and
- e. Information from previous medical examinations of the affected employee

that is not otherwise available to the examining physician.

1.10.1.2 Written Medical Opinion: For each worker, a written medical opinion prepared and signed by a licensed physician indicating the following:

- a. Summary of the results of the examination.
- b. The potential for an existing physiological condition that would place the

employee at an increased risk of health impairment from exposure to asbestos.
- c. The ability of the individual to wear personal protective equipment including respirators while performing strenuous work tasks under cold stress and/or heat stress conditions.
- d. A statement that the employee has been informed of the results of the

examination, been provided a copy of the results, informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure, and formed of any medical condition that may result from asbestos exposure.

1.10.3 Medical and Exposure Records

Complete and accurate records shall be maintained of each employee's medical examinations, medical records and exposure data as required by 29 CFR 1910 Section 1910.20 and 29CFR 1926 Section .1101 for a period of 50 years after termination of employment. Records of the required medical examinations and exposure data shall be made available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA) or authorized representatives of the employee and an employee's physician upon request of the employee or former employee. Maintain on file at the work site for review as requested by the Contracting Officer or the representative, a copy of the required medical certification for each employee.

1.11 TRAINING PROGRAM

The Contractor shall establish a training program as specified by [United States Environmental Protection Agency (EPA) Model Accreditation Plan (MAP) training requirements at 40 CFR 763 Subpart E, Appendix C and OSHA requirements at 29 CFR 1926 Section .1101(k)(9), applicable state requirements and this specification.

Prior to the commencement of work, each worker shall be instructed by the Contractor's Designated IH and Competent Person in the following project specific training:

- a. The hazards and health effects of the specific types of ACM to be abated;
- b. The content and requirements of the Contractor's APP to include the AHAP and
AHAs and site-specific safety and health precautions;
- c. Hazard Communication Program;
- d. Hands-on training for each asbestos abatement technique to be employed;
- e. Heat and/or cold stress monitoring specific to this project;
- f. Air monitoring program and procedures;
- g. Medical surveillance to include medical and exposure record keeping procedures;
- h. The association of cigarette smoke and asbestos-related disease;
- i. Security procedures;
- j. Specific work practice controls and engineering controls required for each Class of work as required at 29 CFR 1926 Section .1101 and 8 CCR 1529 .

1.11.1 Class I and Class II Operations: Within 1 year prior to assignment and commencement of work on this asbestos abatement project, each worker directly involved in Class I activities, handling ACM, ACM generated wastes to include packaging and transporting such wastes for disposal, shall take and successfully complete a course of asbestos training. Workers shall take and successfully complete the USEPA Model Accreditation Plan (MAP) "Worker" course required at 40CFR 763 Subpart E, Appendix C. On-site supervisors and technical support personnel shall take and successfully complete the USEPA Model Accreditation Plan (MAP) "Contractor/ Supervisor" course course required at 40CFR 763 Subpart E. The USEPA MAP Worker and Contractor/Supervisor courses taken more than 1 year prior to commencement of work are acceptable provided that the individual has successfully completed the annual refresher training as required by the regulatory agency.

1.12 RESPIRATORY PROTECTION PROGRAM

1.12.1 Written Respiratory Protection Program: The Contractor's Designated IH shall establish in writing, and implement a respiratory protection program in accordance with 29 CFR 1926 Section .1101, 29 CFR 1910 Section .134, ANSI Z88.2, CGA G-7 and CGA G-7.1 and DETAIL SHEET 12. The Contractor's Designated IH shall establish minimum respiratory protection requirements based on measured or anticipated levels of airborne asbestos fiber concentrations encountered during the performance of the asbestos abatement work. The Contractor's respiratory protection program shall include, but not be limited to, the following elements:

- a. The company policy, used for the assignment of individual responsibility, accountability, and implementation of the respiratory protection program.
- b. The standard operating procedures covering the selection and use of respirators.

Respiratory selection shall be determined by the hazard to which the worker is exposed.
- c. Medical evaluation of each user to verify that the worker may be assigned to an activity where respiratory protection is required.
- d. Training in the proper use and limitations of respirators.
- e. Respirator fit-testing, i.e., quantitative, qualitative and individual functional fit checks.
- f. Regular cleaning and disinfection of respirators.
- g. Routine inspection of respirators during cleaning and after each use when designated for emergency use.
- h. Storage of respirators in convenient, clean, and sanitary locations.
- I. Surveillance of work area conditions and degree of employee exposure (e.g., through air monitoring).
- j. Regular evaluation of the continued effectiveness of the respiratory protection program.
- k. Recognition and procedures for the resolution of special problems as they affect respirator use (e.g. no facial hair that comes between the respirator face piece and face or interferes with valve function; prescription eye wear usage; contact lens usage; etc).
- l. Proper training in putting on and removing respirators..

1.12.2 Respiratory Fit Testing: A qualitative or quantitative fit test conforming 29 CFR 1926 Section .1101, Appendix C and 29 CFR 1910 Section .134 shall be conducted by the Contractor's Designated IH for each Contractor worker required to wear a respirator, and for the Contracting Officer and authorized visitors who enter an asbestos regulated work area where respirators are required to be worn. A respirator fit test shall be performed for each worker wearing a negative-pressure respirator prior to initially wearing a respirator on this project and annually thereafter. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn, or of full- facepiece air purifying respirators where they are worn at levels at which half-facepiece air purifying respirators are permitted. If physical changes in a worker develop that will affect the fit, a new fit test shall be performed. Functional fit checks shall be performed by employees each time a respirator is put on and in accordance with the manufacturer's recommendation.

1.12.3 Respirator Selection and Use Requirements: The Contractor shall provide respirators, and ensure that they are used as required by 29 CFR 1926 Section .1101 and 8 CCR 1529 Section 1926.1101 and used in accordance with manufacturers recommendations. Respirators shall be approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (MSHA/NIOSH), under the provisions of 30 CFR 11 or 42 CFR 84, for use in environments containing

airborne asbestos fibers. Personnel who handle ACM, enter asbestos regulated work areas that require the wearing of a respirator, or who are otherwise carrying out abatement activities that require the wearing of a respirator, shall be provided with approved respirators that are fully protective of the worker at the measured or anticipated airborne asbestos concentration level to be encountered. The contractor shall inform employees that if they are required to wear a respirator then they may require the employer to supply a powered air-purifying respirator in lieu of a negative pressure respirator. For air-purifying respirators, the particulate filter portion of the cartridges or canister approved for use in airborne asbestos environments shall be high-efficiency particulate air (HEPA). The initial respirator selection and the decisions regarding the upgrading or downgrading of respirator type shall be made by the Contractor's Designated IH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered. All recommendations made by the Contractor's Designated IH to downgrade respirator type shall be submitted in writing to the Contracting Officer. The Contractor's Designated Competent Person in consultation with the Designated IH, has the authority to take immediate action to upgrade or downgrade respiratory type when there is an immediate danger to the health and safety of the wearer.

1.12.4 Sanitation: Employees who wear respirators shall be permitted to leave work areas to wash their faces and respirator facepieces whenever necessary to prevent skin irritation associated with respirator use.

1.13 HAZARD COMMUNICATION PROGRAM

A hazard communication program shall be established and implemented in accordance with 29 CFR 1926 Section .59 and 8 CCR 1529.

1.14 DESIGNATED INDUSTRIAL HYGIENIST (IH)

Personal, area/environmental, clearance air sampling and training shall be conducted under the direction of an IH experienced in asbestos abatement. For the purpose of this contract, the Contractor shall retain the services of an independent IH to perform all contract required air monitoring.

1.15 LICENSES, PERMITS AND NOTIFICATIONS

Necessary licenses, permits and notifications shall be obtained in conjunction with the project asbestos abatement, transportation and disposal actions and timely notification furnished of such actions as required by Federal, state, regional, and local authorities and as otherwise specified herein. The Contractor shall notify the Regional Office of the USEPA, state's environmental protection agency responsible for asbestos air emissions, local air pollution control district/agency, state OSHA program and the Contracting Officer in writing at least 10 days prior to the commencement of work in accordance with 40 CFR 61 Subpart M, state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form, CAL OSHA Registration, and other required notification documents. Notification shall be by Certified Mail - Return Receipt Requested. The Contractor shall furnish copies of the receipts to the Contracting Officer in writing prior to the commencement of work. The local fire department shall be

notified 3 days before work commences in any building and the notice shall specify when the material contains asbestos. A copy of the written notification shall be provided to any rental company concerning the intended use of rental equipment and the possibility of asbestos contamination, the decontamination procedures that will be used prior to the return of the equipment. A copy of the rental company's written acknowledgment and agreement shall be included in the submittal. The Contractor shall also Register with the state of California as required by 8 CCR 341.6 and fill out a Report of Use as required in 8 CCR 1529 (r). For licenses, permits and notifications that the Contractor is responsible for obtaining, the Contractor will pay any associated fees or other costs incurred.

1.15.1 LITIGATION AND NOTIFICATION: The Contractor shall notify the CO if any of the following occur:

- a. If the Contractor or any of its subcontractors are served with notice of violation of any law, regulation, permit or license which relates to this Contract;
- b. Proceedings are commenced which could lead to revocation of related permits or licenses; permits, licenses or other government authorizations relating to this Contract are revoked;
- c. Litigation is commenced which would affect this Contract; and
- d. If the Contractor or any of its subcontractors become aware that its equipment or facilities are not in compliance or may fail to comply in the future with applicable laws or regulations.

1.16 PERSONAL PROTECTIVE EQUIPMENT

1.16.1 General: Three complete sets of personal protective equipment shall be made available to the Contracting Officer and authorized visitors for entry to the asbestos regulated work area at all times for inspection of the asbestos regulated work area. Contracting Officer and authorized visitors shall be provided with training equivalent to that provided to Contractor employees in the selection, fitting, and use of the required personal protective equipment and the site safety and health requirements. Contractor workers shall be provided with personal protective clothing and equipment as specified herein and the Contractor shall ensure that it is worn properly. The Contractor's Designated IH and Designated Competent Person supervisor shall select and approve all the required personal protective clothing and equipment to be used.

1.16.2 Respirators: See paragraph RESPIRATORY PROTECTION PROGRAM.

1.16.3 Whole Body Protection

Personnel exposed to airborne concentrations of asbestos that exceed the PELs, or for all OSHA Classes

of work for which a required negative exposure assessment is not produced, shall be provided with whole body protection and such protection shall be worn properly. The Contractor's Designated IH and Competent Person supervisor shall select and approve the whole body protection to be used. The Competent Person shall examine work suits worn by employees at least once per work shift for rips or tears that may occur during performance of work. When rips or tears are detected while an employee is working, rips and tears shall be immediately mended, or the work suit shall be immediately replaced. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area or be properly laundered in accordance with 29 CFR 1926 and 8 CCR 1529 and as specified in the Contractor's AHAP. Whole body protection use for asbestos abatement shall not be removed from the work site by a worker to be cleaned. All recommendations made by the Contractor's Designated IH to downgrade whole body protection shall be submitted in writing to the Contracting Officer. The Contractor's Designated Competent Person in consultation with the Designated IH, has the authority to take immediate action to upgrade or downgrade whole body protection when there is an immediate danger to the health and safety of the wearer.

1.17 HYGIENE FACILITIES AND PRACTICES:

1.17.1 General: The Contractor shall establish a decontamination area for the decontamination of employees. The Contractor shall ensure that employees enter and exit the regulated area through the decontamination area.

1.17.2 3-Stage Decontamination Area: A temporary negative pressure decontamination unit that is adjacent and attached in a leak-tight manner to the regulated area shall be provided as described in SET-UP DETAIL SHEET Numbers 22 and 23. Utilization of prefabricated units shall have prior approval of the Contracting Officer. The decontamination unit shall have a separate equipment room and a clean room with a shower that complies with 29 CFR 1910 Section .141 in between (unless the Contractor can demonstrate that they are not feasible). Two separate lockers shall be provided for each asbestos worker, one in the equipment room and one in the clean room. Street clothing and street shoes shall be kept in the clean locker. Upon exiting from the asbestos regulated work area to the equipment room, respirators shall be worn while asbestos contaminated protective clothing is HEPA-vacuumed, removed, and placed in approved labeled containers (see DETAIL SHEETS 9 and 14) for disposal and/or laundering. Workers shall shower before changing into street clothes. Should sufficient hot water be unavailable, the Contractor shall provide a minimum 40 gallon electric hot water heater with minimum recovery rate of 20 gallons per hour and a temperature controller for each showerhead. The Contractor shall provide a minimum of 2 showers. Instantaneous type in-line water heater may be incorporated at each shower head in lieu of hot water heater upon approval by the Contracting Officer. Flow and temperature controls shall be located within the shower and be adjustable by the user. The wastewater pump shall be sized for 1.25 times the showerheads' flow-rate at a pressure head sufficient to satisfy the filter head loss and discharge line losses. The pump shall supply a minimum 25 gallons per minute flow with 35 ft. of pressure head. Used shower water shall be collected and filtered to remove asbestos contamination. Filters and residue shall be

disposed of as asbestos contaminated material, see DETAIL SHEETS 9 and 14. Filtered water shall be discharged to the sanitary system after the contractor has determined that it contains no hazardous materials (ie lead contamination) as required by the local agency in charge of the sanitary sewer system. Wastewater filters shall be installed in series with the first stage pore size of 20 microns and the second stage pore size of 5 microns. The floor of the decontamination unit's clean room shall be kept dry and clean at all times. Water from the shower shall not be allowed to wet the floor in the clean room. Surfaces of the clean room and shower shall be wet-wiped 2 times after each shift change with a disinfectant solution. Proper housekeeping and hygiene requirements shall be maintained. Soap and towels shall be provided for showering, washing and drying. Any cloth towels provided shall be disposed of as ACM waste or be laundered in accordance with CFR 29 Part 1926 Section .1101 and the Contractor's Asbestos Hazard Abatement Plan.

1.17.3 Load-Out Unit: A temporary load out unit that is adjacent and connected to the regulated area and access tunnel shall be provided as described in DETAIL SHEET Numbers 20 and 25. Utilization of prefabricated units shall have prior approval of the Contracting Officer. The load-out unit shall be attached in a leak-tight manner to each asbestos regulated work area. Surfaces of the Load-Out-Unit and access tunnel shall be adequately wet-wiped 2 times after each shift change. Materials used for wet wiping shall be disposed of as asbestos contaminated waste.

1.17.4 Decontamination Area Entry Procedures: The Contractor shall ensure that employees:

- a. Enter the decontamination area through the clean room.
- b. Remove and deposit street clothing within a locker provided for their use.
- c. Put on protective clothing and respiratory protection before leaving the clean room.
- d. Employees shall pass through the equipment room to enter the regulated area.

1.17.5 Decontamination Area Exit Procedures: The Contractor shall ensure that:

- a. Before leaving the regulated area, respirators shall be worn while employees remove all gross contamination and debris from their work clothing using a HEPA vacuum.
- b. Employees shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers (see Detail Sheets 9 and 14) 6
disposal and/or laundering.
- c. Employees shall not remove their respirators in the equipment room.
- d. Employees shall shower prior to entering the clean room.
- e. After showering, employees shall enter the clean room before changing into street clothes.

1.17.6 Lunch Areas: The Contractor shall provide lunch areas in which the airborne concentrations of asbestos are below 0.01 f/cc.

1.18 REGULATED AREAS:

All Class I and II asbestos work shall be conducted within regulated areas. The regulated area shall be demarcated in a manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, they may demarcate the regulated area. Access to regulated areas shall be limited to authorized persons. The Contractor shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated area. The Contractor may permit smoking in designated areas. The Contractor shall control access to regulated area, ensure that only authorized personnel enter, and verify that Contractor required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.

1.19 WARNING SIGNS AND TAPE

Bilingual warning signs and tape printed in English and Spanish shall be provided at the regulated boundaries and entrances to asbestos regulated work areas. The Contractor shall ensure that employees working in areas contiguous to regulated areas comprehend the warning signs. Signs shall be located at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Warning signs as shown and described in DETAIL SHEET 11 appended herein shall be in vertical format conforming to 29 CFR 1910 and 29 CFR 1926 Section .1101, with dimensions at a minimum of 20 by 14 inches and displaying the following legend in the lower panel:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

Spacing between lines shall be at least equal to the height of the upper of any two lines. Warning tape shall be provided as shown and described on DETAIL SHEET 11, appended herein. Decontamination unit signage shall be as shown and described on DETAIL SHEET 15, appended herein. In addition when the use of respirators and protective clothing is required the warning sign shall also include the statement:

RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

1.20 WARNING LABELS

Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements specified herein are acceptable. Warning labels shall be as described in DETAIL SHEET 14 appended here-in, shall conform to 29 CFR 1926 Section .1101 and 8 CCR 1529

and shall be of sufficient size to be clearly legible displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

1.21 LOCAL EXHAUST SYSTEM

A local exhaust system shall be provided in the asbestos regulated work area as described in DETAIL SHEET 8, appended herein and in accordance with ANSI Z9.2 and 29 CFR 1926 Section .1101 and 8 CCR 1529. The system shall provide at least 4 air changes per hour inside of the containment. The local exhaust system shall be operated 24 hours per day, until the asbestos regulated containment area is removed and shall be leak proof to the filter and equipped with HEPA filters. Local exhaust equipment shall be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential shall be monitored continuously, 24 hours per day, with an automatic recording instrument. In no case shall the building ventilation system be used as the local exhaust system for the asbestos regulated work area. Filters on local exhaust system equipment shall conform to ANSI Z9.2 and UL 586. Filter shall be UL labeled. The local exhaust system shall terminate out of doors. All filters used shall be new at the beginning of the project and shall be periodically changed as necessary and disposed of as ACM waste.

1.21.1 Pressure Differential Recordings: Pressure differential recordings shall be provided daily on the same day collected. Readings shall be reviewed by the Contractor's Designated Competent Person and IH prior to submittal. The Contracting Officer shall be notified immediately of any variance in the pressure differential which could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.005 fiber per cubic centimeter (f/cc) or background, whichever is higher.

1.22 TOOLS

Vacuums shall be leak proof to the filter, equipped with HEPA filters, be of sufficient capacity and provide the necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system or has otherwise been approved for use by the Contracting Officer. All residual asbestos shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from asbestos regulated work areas.

1.23 RENTAL EQUIPMENT

If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that

will be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

1.24 AIR MONITORING EQUIPMENT

The Contractor's Designated IH shall select and approve the air monitoring equipment to be provided and used by the Contractor for evaluation of airborne asbestos fiber concentrations. The equipment shall include, but not be limited to:

- a. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute when equipped with a sampling train of tubing and filter cassette.
- b. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit which shall maintain a constant flow even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
- c. Single use standard 25 millimeter diameter cassette, open face, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 millimeter electrically conductive extension cowl, and shrink bands, to be used with low flow pumps in accordance with 29 CFR 1926 Section .1101 and 8 CCR 1529 for personal air sampling.
- d. Single use standard 25 millimeter diameter cassette, open face, 0.45 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 millimeter electrically conductive cowl, and shrink bands, to be used with high flow pumps when conducting environmental area sampling using NIOSH-01 Methods 7400 and 7402, OSHA Method ID-160 and the transmission electric microscopy method specified at 40 CFR 763.
- e. Appropriate plastic tubing to connect the air sampling pump to the selected filter cassette.

- f. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 degrees Fahrenheit to plus 140 degrees Fahrenheit and traceable to a National Institute for Standards and Technology (NIST) primary standard.

1.25 EXPENDABLE SUPPLIES

1.25.1 Glove Bag: Glove bags shall be provided as described in 29 CFR 1926 Section .1101 SET-UP DETAIL SHEET 10. The glove bag assembly shall be prefabricated with preprinted OSHA warning label and shall typically be constructed of 6 mil thick transparent polyethylene or polyvinyl chloride sheeting and at least two inward projecting long sleeves and an internal pouch. The glove bag shall be constructed and installed so that it completely covers the circumference of pipe or other structure where the work is to be done. Glove bags may be used only once and may not be moved. Glove bags shall not be used on surfaces whose temperature exceeds 150 degrees centigrade.

1.25.2 Duct Tape: Industrial grade duct tape shall be provided in 2 inch and 3 inch widths and shall be suitable for bonding sheet plastic and disposal containers specified herein.

1.25.3 Disposal Containers:

Leak-tight disposal containers shall be provided for ACM generated wastes as described in DETAIL SHEETS 9A, 9B, 9C and 14 and as specified herein. Leak-tight means that solids, liquids or dust cannot escape or spill out. All disposal containers shall be either pre-labeled or affixed with OSHA warning label as specified in 29 CFR 1926 Section .1101 and 8 CCR 1529 .

1.25.4 Disposal Bags: 6 mil thick leak-tight pre-labeled (OSHA warning label) bags shall be provided for placement of asbestos generated waste as described in DETAIL SHEET 9A.

1.25.5 Leak-tight Wrapping: Two layers of 6 mil (minimum) thick polyethylene sheet stock shall be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments and other materials too large to be placed in disposal bags as described in DETAIL SHEET 9B. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.

1.25.6 Fiberboard Drums: Fiberboard drums shall be provided if required by state or local requirements.

1.25.7 Cardboard Boxes: Heavy-duty corrugated cardboard boxes coated with plastic or wax to retard deterioration from moisture shall be provided as described in DETAIL SHEET 9C if required by state and local requirements. Boxes shall fit into selected ACM disposal bags. Filled boxes shall be sealed leak-tight with duct tape.

1.25.8 Sheet Plastic:

Sheet plastic shall be provided as specified herein and in the largest sheet size necessary to minimize seams, as indicated on the project drawings.

1.25.8.1 Polyethylene Sheet - General: Six-mil (minimum) thick polyethylene film shall be clear and conform to ASTM D 4397.

1.25.8.2 Polyethylene Sheet - Flame Resistant: Where a potential for fire exists, 6-mil (minimum) thick, flame-resistant polyethylene sheet shall be provided. Flame-resistant polyethylene film shall be clear and shall conform to the requirements of NFPA 701.

1.25.8.3 Polyethylene Sheet-Reinforced: Six-mil thick reinforced polyethylene sheet shall be provided where high skin strength is required such as where it constitutes the only barrier between the asbestos regulated work area and the outdoor environment. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between two layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

1.25.8.4 Viewing Inspection Window: Where feasible, a minimum of 1 clear 1/8-inch thick acrylic sheet, 18 inches by 24 inches, shall be installed as a viewing inspection window at eye level on a wall in each containment enclosure. All such windows shall be sealed leak-tight with industrial grade duct tape.

1.25.9 Wetting Agents

1.25.9.1 Amended Water: Amended water shall meet the requirements of ASTM D 1331.

1.25.9.2 Removal Encapsulant: Removal encapsulant (a penetrating encapsulant) shall be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM equal to or greater than provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS.

1.25.10 Strippable Coating: Strippable coating in aerosol cans shall be used to adhere to surfaces and to be removed cleanly by stripping at the completion of work. Since these coatings have a hydrocarbon carrying agent, their use shall be confined to well ventilated areas.

1.25.11 Mastic Removing Solvent: Mastic removing solvent shall be nonflammable and shall not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used on-site shall have a flash point greater than 140 degrees Fahrenheit.

1.26 MATERIAL SAFETY DATA SHEETS

Material safety data sheets (MSDSs) shall be provided for all hazardous materials brought onto the

worksite. One copy shall be provided to the Contracting Officers on-site Representative and one copy shall be included in the Contractor's Hazard Communication Program.

1.27 OTHER ITEMS

A sufficient quantity of other items shall be provided that may include, but not be limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, lumber necessary for the construction of asbestos regulated containment work areas, UL approved temporary electrical equipment, material and chords, ground fault circuit interrupters, water hoses of sufficient length, fire extinguishers, first aid kits, portable toilets, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas, project boundary fencing, etc.

PART 2 PRODUCTS

2.1 ENCAPSULANTS

Encapsulants shall conform to USEPA requirements, shall contain no toxic or hazardous substances and no solvent and shall meet the following requirements:

ALL ENCAPSULANTS

Requirement	Test Standard
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Combustion Toxicity Zero Mortality	University of Pittsburgh Protocol
Life Expectancy - 20 years Accelerated Aging Test	ASTM C 732
Permeability - Minimum 0.4 perms	ASTM E 96

Additional Requirement for *Lock-Down* Encapsulant

Requirement	Test Standard
Fire Resistance - Negligible affect on fire resistance rating over 3 hour test (Tested with fireproofing over encapsulant applied directly to steel member)	ASTM E 119
Bond Strength - 100 pounds, force/foot (Tests compatibility with cementitious and fibrous fireproofing)	ASTM E 736

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall use the engineering controls and work practices required in 29 CFR 1926 Section .1101(g) and 8 CCR 1529 in all operations covered by this section, regardless of the levels of exposure. Asbestos abatement work tasks shall be performed as shown on the detailed plans and drawings as summarized in paragraph DESCRIPTION OF WORK . Personnel shall wear and utilize protective clothing and equipment as specified. Eating, smoking, drinking, or applying cosmetics shall not be permitted in the asbestos regulated work area. All hot work (burning, cutting, welding, etc.) shall be conducted under strictly controlled conditions in conformance with CFR 29 Part 1926. Personnel of other trades not engaged in asbestos abatement activities shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions as required herein are complied with. The building heating, ventilating, and air conditioning system shall be shut down, openings to the system capped prior to the commencement of abatement work. Electrical service shall include ground fault circuit interrupters and shall be disconnected where necessary for wet removal. Temporary electrical service shall be provided where needed. If an asbestos spill occurs outside of the asbestos regulated work area, work shall be stopped and the Contracting Officer shall be notified. The condition shall be corrected to the satisfaction of the Contracting Officer including air sampling, prior to resumption of work. The Contractor shall stop abatement work in the asbestos regulated work area immediately when the airborne total fiber concentrations, (1) equals or exceeds 0.01 f/cc or the pre-abatement concentration, whichever is greater, - outside the asbestos regulated work area, or (2) equals or exceeds 1.0 f/cc inside the asbestos regulated work area. The Contractor shall correct the condition to the satisfaction of the Contracting Officer, including visual inspection and air sampling. Work resumption will only be allowed upon notification by the Contracting Officer. Corrective actions shall be documented.

3.2 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

Asbestos abatement work shall be performed without damage or contamination of adjacent work or area. Where such work or area is damaged or contaminated as verified by the Contracting Officer using visual inspection and/or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Government as deemed appropriate by the Contracting Officer. This includes inadvertent spill of dirt, dust or debris in which it is reasonable to conclude that asbestos may exist.

When these spills occur, work shall stop in all effected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and/or sampling analysis results are obtained and have been evaluated by the Contractor's Designated IH and the Contracting Officer, work may proceed.

3.3 OBJECTS

3.3.1 Removal of Mobile Objects: Mobile Objects, furniture, and equipment will be removed from the area by the Government before asbestos abatement work begins. Other items left in the structures shall be disposed of as demolition debris.

3.4 BUILDING VENTILATION SYSTEM AND CRITICAL BARRIERS

Building ventilating systems supplying air into or returning air out of an asbestos regulated work area shall be

isolated by airtight seals to prevent contamination spread throughout the system. Air-tight critical barriers shall be installed on all building ventilating openings that supply, or return air from the building ventilation system or serves to exhaust air from the building, that are located inside the asbestos regulated work area. Edges to wall, ceiling and floor surfaces shall be sealed with industrial grade duct tape. Critical barriers shall be installed as shown on drawings and appended SET-UP DETAIL SHEETS and as specified herein.

3.5 ASBESTOS CONTROL AREA REQUIREMENTS

Regulated containment areas shall be established and maintained for each abatement work task as specified in 29 CFR 1926 Section .1101 and 8 CCR 1529 and the selected SET-UP DETAIL SHEETS. A viewing inspection window shall be installed on the wall of the containment enclosure, as specified in paragraph Viewing Inspection Window. The following procedures shall be performed sequentially and each activity shall be completed before proceeding to the next. Various steps may be omitted for an individual containment area when that work is not specified on the drawings.

- a. Objects and furnishings in the asbestos regulated work area shall be as specified at paragraph OBJECTS.
- b. Tools, scaffolding, staging, etc., necessary for the work shall be placed in the area
to be isolated prior to erection of work area enclosed containment.
- c. Building ventilating systems serving the work area shall be shutdown or isolated.
- d. Power to the asbestos regulated work area shall be locked-out by switching off all
breakers serving power or lighting to this area in accordance with 29 CFR 1910.
- e. Personnel Decontamination Unit shall be installed as specified and shown in SET-UP DETAIL SHEETS 22 and 23. Load-Out unit shall be installed as specified herein and in SET-UP DETAIL SHEET 20.
- f. Critical barriers shall be installed as required for building ventilation system.
- g. Local exhaust ventilation system shall be installed as specified and shown on DETAIL SHEET 8.
- h. Containment area shall be installed as required for each abatement task as specified and shown on the SET-UP DETAIL SHEETS.

3.6 CLEAN UP

The Contractor shall maintain a clean work area by performing on a daily basis the following housekeeping functions at the end of each shift:

- a. Loose ACM shall be prepared for disposal by packaging the waste and removing it from the work area to the load-out area.
- b. Work area shall be HEPA vacuumed.
- c. Polyethylene in work and high traffic areas shall be inspected and repaired.
- d. Containment area shall be wet wiped if air sample results exceed prescribed level.

3.7 METHODS OF COMPLIANCE

3.7.1 Mandated Practices:

The Contractor shall employ proper handling procedures in accordance with 29 CFR 1926 Section .1101 and 8 CCR 1529 and 40 CFR 61 Subpart M and the specification requirements herein. The specific abatement techniques and items identified shall be detailed in the Contractor's Asbestos Hazard Abatement Plan including but not limited to details of construction materials, equipment, and handling procedures. The Contractor shall use the appended drawings which detail the required work practices and engineering controls. The Contractor shall use the following engineering controls and work practices in all operations, regardless of the levels of exposure:

- a. Vacuum cleaners equipped with HEPA filters to collect all debris and dust containing ACM.
- b. Wet methods or wetting agents to control employee exposures during asbestos handling, mixing, removal, cutting, application, and cleanup, except where it can be demonstrated that the use of wet methods is infeasible due to, for example, the creation of electrical hazards, equipment malfunction, and in roofing.
- c. Prompt clean-up and disposal of wastes and debris contaminated with asbestos in leak-tight containers.

3.7.2 Control Methods: In addition, the Contractor shall use the following control methods to achieve compliance with the PELs:

- a. Local exhaust ventilation equipped with HEPA filter dust collection systems;
- b. Enclosure or isolation of processes producing asbestos dust;
- c. Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter;
- d. Use of other work practices and engineering controls
- e. Where the feasible engineering and work practice controls described above are not sufficient to reduce employee exposure to or below the PELs, the Contractor shall use them to reduce employee exposure to the lowest levels attainable by these controls and shall supplement them by the use of respiratory protection that complies with SETUP DETAIL SHEET (14).

3.7.3 Unacceptable Practices: The following work practices and engineering controls shall not be used

for work related to asbestos or for work which disturbs ACM, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

- a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
- b. Compressed air used to remove asbestos, or materials containing asbestos, unless

the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.
- c. Dry sweeping, shoveling, or other dry clean-up of dust and debris containing ACM.
- d. Employee rotation as a means of reducing employee exposure to asbestos.

3.7.4 Class I Work: In addition to requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

- a. A Competent Person shall supervise the installation and operation of the control system.
- b. For jobs involving the removal of more than 25 linear or 10 square feet of TSI or surfacing material, the Contractor shall place critical barriers over all openings to the regulated area.
- c. HVAC systems shall be isolated in the regulated area by sealing with a double layer of 6 mil plastic.
- d. Impermeable drop cloths (6 mil or greater) shall be placed on surfaces beneath all removal activity.
- e. Objects within the regulated area shall be handled as specified in paragraph 3.3, Objects.
- f. An additional portable HEPA air ventilation unit not exhausted to the outside as shown in SETUP DETAIL SHEET 21 shall be used to move contaminated air away from the breathing zone of employees toward a separate HEPA filtration unit(s) used establishing the negative pressure enclosure. 6

3.7.5 Specific Control Methods for Class I Work: In addition to requirements of paragraph, Class I Work, Class I asbestos work shall be performed using the following control methods:

- a. Negative Pressure Enclosure (NPE) systems as shown in SETUP DETAIL SHEET 3.
- 3. The negative pressure enclosure shall be kept under negative pressure

with at least 4 air changes per hours. A minimum of -0.02 column inches of water pressure differential, relative to the outside pressure, shall be maintained and evidenced by manometric measurements. Air movement shall be directed away from the employees and toward a HEPA filtration device. The NPE shall be smoke tested for leaks at the beginning of each shift.

b. Glove Bag Systems as shown in SETUP DETAIL SHEET 10 to remove ACM

from straight runs of piping and elbows and other connections. Asbestos regulated work areas shall be established as specified and shown on detailed drawings and plans for glove bag abatement. Designated boundary limits for the asbestos work

shall be established with rope or other continuous barriers and all other requirements for asbestos control areas shall be maintained including area signage and boundary warning tape as specified in SET-UP DETAIL SHEET 11. Area monitoring of

airborne asbestos fibers shall be conducted during the work shift at the Designated

boundary limits and personal air monitoring shall be performed for each worker

engaged in asbestos handling (removal, disposal, transport and other associated work) at such frequency as specified in the Contractor's air monitoring plan. If the concentration of asbestos fibers monitored at any times exceeds 0.01 f/cc or the

preabatement level, whichever is greater, work shall be stopped and the Contracting Officer shall be notified. The Contractor shall correct the condition to the satisfaction of the Contracting Officer to include visual inspection and air sampling. Work resumption will only be allowed upon notification by the Contracting Officer. If adjacent areas outside the regulated work area are contaminated, the contractor at his expense, shall clean the contaminated area, visually inspect the cleaned area, and conduct air monitoring. Glove bags shall be made of 6 mil thick plastic, seamless at the bottom and used without modification. Glove bags shall be smoke-tested for leaks any leaks sealed prior to use. Glove bags shall be used only once and shall not be moved. They shall not be used on surfaces whose temperature exceeds 150 degrees Fahrenheit. Prior to disposal, glove bags shall be collapsed by removing air within them using a HEPA vacuum. Before beginning the operation, loose and friable material adjacent to the glove bag operation shall be wrapped and sealed in two layers of six-mil plastic or otherwise rendered intact. At least two persons shall perform Class I glove bag removal.

c. Negative pressure glove bag systems to remove ACM from straight runs of piping

and elbows and other connections. In addition to requirements for glove bag systems at Paragraph, Glove Bag Systems above, the Contractor shall attach HEPA vacuum systems or other devices to the bag to prevent collapse during removal.

- d. A Mini-Containment Area (small walk-in enclosure) as shown in SETUP DETAIL SHEET 5 which accommodates no more than two persons may be used if the disturbance or removal can be completely contained by the enclosure with the following specifications and work practices. The mini-enclosure shall be inspected for leaks and smoke tested before each use. Air movement shall be directed away from the employee's breathing zone within the mini-enclosure.
- e. Wrap and Cut Operation: as shown in SETUP DETAIL SHEET 9B. Prior to cutting pipe, the asbestos-containing insulation shall be wrapped with 6-mil polyethylene plastic and securely sealed with duct tape to prevent asbestos becoming airborne as a result of the cutting process. Install glove bag, strip back sections to be cut 6 inches from point of cut, and cut pipe into manageable sections.

3.7.6 Class II work: In addition to the requirements of paragraphs, Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

- a. A Competent Person shall supervise the work.
- b. For indoor work, critical barriers shall be placed over all openings to the regulated area.
- c. Impermeable drop cloths shall be placed on surfaces beneath all removal activity.

3.7.7 Specific Control Methods for Class II Work: In addition to requirements of paragraph, Class II Work, Class II asbestos work shall be performed using the following methods:

a. Vinyl and Asphalt Flooring Materials: The Contractor shall use the following work practices when removing vinyl, concrete and asphalt flooring materials which contain ACM or tile from buildings as shown in RESPONSE ACTION DETAIL SHEET 57, 61 and 64. Resilient sheeting shall be removed by adequately wet methods. Tiles shall be removed intact (if possible). Wetting is not required when tiles are heated and removed intact. Flooring or its backing shall not be sanded. Scraping of residual adhesive and/or backing shall be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Dry sweeping is prohibited. The Contractor shall use vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) to clean floors.

b. Roofing Material: The Contractor shall use the following work practices when removing roofing materials which contain ACM as shown in RESPONSE ACTION DETAIL SHEET 74 and 75. Roofing material shall be removed in an intact state. Wet methods shall be used to remove roofing materials that are not intact, or that will be rendered not intact during removal, unless such wet methods are not feasible or will create safety hazards. When removing built-up roofs with asbestos-containing roofing felts and an

aggregate surface using a power roof cutter, all dust resulting from the cutting operations shall be collected by a HEPA dust collector, or shall be HEPA vacuumed by vacuuming along the cut line. Asbestos-containing roofing material shall not be dropped or thrown to the ground. It shall be lowered to the ground via covered, dust-tight chute, crane, excavator or hoist. Any ACM that is not intact shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift. While the material remains on the roof it shall either be kept wet, placed in an impermeable waste bag, or wrapped in plastic sheeting. Intact ACM shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift. Unwrapped material shall be transferred to a closed receptacle in such manner so as to preclude the dispersion of dust. Critical barriers shall be placed over roof level heating and ventilation air intakes.

c. Cementitious Asbestos-containing Siding and Shingles or Transite Panels Containing ACM: The Contractor shall use the following work practices when removing cementitious asbestos-containing siding, shingles or Transite panels. Intentionally cutting, abrading or breaking siding, shingles, or Transite panels shall be prohibited. Each panel or shingle shall be sprayed with amended water prior to removal. Nails shall be cut with flat, sharp instruments. Unwrapped or unbagged panels or shingles shall be immediately lowered to the ground via covered dust-tight chute, crane or hoist, or placed in an impervious waste bag or wrapped in plastic sheeting and lowered to the ground no later than the end of the work shift.

d. Gaskets: The gasket shall be thoroughly wetted with amended water prior to its removal and immediately placed in a disposal container. If a gasket is visibly deteriorated and unlikely to be removed intact, removal shall be undertaken within a glove bag. Any scraping to remove residue must be performed wet.

3.7.8 Alternative Methods for Certain Roofing Materials: The Contractor shall use the following engineering controls and work practices when removing roof cements, mastics, coatings, or flashings which contain asbestos fibers encapsulated or coated by bituminous or resinous compounds. If during the course of the job the material does not remain intact, the Contractor shall use the procedures described in paragraph 3.8.7.b, Roofing Material. Before work begins and as needed during the job, the Designated Competent Person shall conduct an inspection and determine that the roofing material is intact and will likely remain intact. The material shall not be sanded, abraded, or ground. Manual methods which would render the material non-intact shall not be used. Roofing material shall not be dropped or thrown to the ground. It shall be lowered via covered, dust-tight chute, crane or hoist. All such material shall be removed from the roof as soon as is practicable, but in any event no later than the end of the work shift. All removals or disturbances shall be performed using wet methods unless they would cause a greater hazard.

3.7.9 Other Specific Requirements: After completion of all asbestos removal work, surfaces from which ACM has been removed shall be wet wiped or sponged clean, or cleaned by some equivalent method to remove all visible residue. Run-off water shall be collected and filtered through the dual filtration system. A first filter shall be provided to remove fibers 10 micrometers and larger and a final filter provided that removes all fibers 5 micrometers and larger. After the gross amounts of asbestos have been removed from every surface; all remaining visible accumulations of asbestos on floors shall be collected using plastic

shovels, rubber squeegees, rubber dustpans and HEPA vacuum cleaners as appropriate to maintain the integrity of the regulated area. When all TSI and surfacing material has been removed, workmen shall use HEPA vacuum cleaners to vacuum every surface. Particular attention shall be paid to those surfaces or locations which could harbor accumulations or residual asbestos dust.

3.7.10 Class I Asbestos Work Response Action Detail Sheets:

The following Class I Asbestos Work Response Action Detail Sheet are specified for each individual work task to be performed.

Pipe Insulation (Using a Glove bag): See Sheet 87

Pipe Insulation (Using a Glove bag): See Sheet 86

Horizontal Pipe Insulation (Using a Containment area): See Sheet 88

Pipe Insulation (Using a Mini Containment Area): See Sheet 89

Pipe insulation (with wrap and cut method): See Sheet 9B

Storage Tank and Boiler Breeching Insulation: See Sheet 93. Written approval must be obtained from the Contracting Officer before start of work on tanks and boiler breeching. Contracting Officer will ensure that tanks and boilers have been valved off or shut down and allowed a sufficient time to cool down. Insulation shall be sprayed with a mist of amended water or removal encapsulant. Amended water or removal encapsulant shall be allowed to saturate material to substrate. Bands or wires holding breeching or insulation to equipment shall be cut. Cover jackets shall be slit at seams, and sections sprayed with amended water to minimize airborne dust. Insulation on tanks and boiler breeching shall not be allowed to drop to the floor. Residue shall be removed from tank and boiler surfaces. A water stream shall be used to dislodge insulation in joints or irregular spaces that cannot be reached with tools. Lagging on piping and insulation on fittings shall be removed. A penetrating encapsulant shall be sprayed on all exposed tank, boiler and boiler breeching surfaces.

Pipe and Fitting Insulation (using Glove bag): See Sheet 86

3.7.11 Class II Asbestos Work Response Action Detail Sheets: The following Class II Asbestos Work Response Action Detail Sheet are specified for each individual work task to be performed.

Vinyl or Vinyl Asbestos Tile Adhered to Wood Floor System by Asbestos Containing Adhesive: See Sheet 61

Vinyl Asbestos Tile or Asbestos Concrete flooring Adhered to Concrete Floor System by Asbestos-Containing Adhesive or Other Material: See Sheet 57

Asbestos-Containing Sheet Flooring Adhered to Concrete Floor System by Asbestos
Containing Adhesive: See Sheet 64
Miscellaneous Asbestos-Containing Materials: See Sheet 45
Roof, Shingles and Underlayment: See Sheet 75

3.7.12 Waste segregation: Many of the buildings to be demolished in this project have asbestos containing linoleum, linoleum mastics, composite roofing, and roof penetrating mastics. These items are not required to be removed before demolition and disposal. The contractor must decide whether it will be more economical to dispose of the entire building as nonhazardous asbestos containing debris or to segregate these asbestos containing materials from the building debris and dispose of this smaller mass separately. If the contractor chooses to dispose of the demolition debris as one waste stream then strict controls must be set in place so as to assure that the debris remains intact and the asbestos materials are not rendered friable due to demolition processes. These controls must be completely detailed in the contractors submittal.

3.8 FINAL CLEANING AND VISUAL INSPECTION

The abated asbestos regulated work area shall be cleaned by collecting, packing, and storing all gross contamination; see SET-UP DETAIL SHEETS 9, 14 and 20. A final cleaning shall use HEPA vacuum and wet cleaning of all exposed surfaces and equipment in the asbestos regulated work area. Upon completion of the cleaning, the Contractor shall conduct a visual pre-inspection of the cleaned area in preparation for a final inspection and re-clean, as necessary. Upon completion of the final cleaning, the Contractor and the Contracting Officer shall conduct a final visual inspection of the cleaned work area in accordance with ASTM E 1368 and document the results on the Final Cleaning and Visual Inspection as specified on the SET-UP DETAIL SHEET 19. If the Contracting Officer rejects the abatement area as not meeting final cleaning requirements, the Contractor shall re-clean as necessary and have a follow-on inspection conducted with the Contracting Officer. Re-cleaning and follow-up re-inspection shall be at the Contractor's expense.

3.9 LOCK DOWN

Prior to removal of plastic barriers and after clean up of gross contamination and final visual inspection, a post removal (lockdown) encapsulant shall then be spray applied to ceiling, walls, floors, and other surfaces in the removal area. The abatement area shall include but not to be limited to constructed enclosures, barriers, polyethylene sheeting that covers any furnishings, and equipment articles to be discarded, critical barriers, air locks, load out units for bag removal, and on-site constructed decontamination unit.

3.10 EXPOSURE ASSESSMENT AND MONITORING

3.10.1 Requirements: Exposure assessment, air monitoring and analysis of airborne concentration of asbestos fibers shall be performed in accordance with 29 CFR 1926 Section .1101, the Contractor's air monitoring plan, and as specified. Personal exposure air monitoring (collected at the breathing zone) that is representative of the exposure of each employee who is assigned to work within a regulated area shall be performed by the Contractor's designated IH. Breathing zone samples shall be taken for at least 25

percent of the workers in each shift, or a minimum of two, whichever is greater. Air monitoring results at the 95 percent confidence level shall be calculated as shown in Table 2 at the end of this section. Preabatement and during abatement area environmental air monitoring shall be performed by the Contractor's designated IH. The Contractor shall maintain a fiber concentration inside a regulated work area equal to or less than 0.1 f/cc expressed as an 8 hour, time-weighted average (TWA) during the conduct of the asbestos abatement. If fiber concentration rises above 0.1 f/cc, work procedures shall be investigated with the Contracting Officer to determine the cause. At the discretion of the Contracting Officer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA. The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as average over a sampling period of 30 minutes. Should either an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA or a personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occur inside a regulated work area, the Contractor shall stop work immediately, notify the Contracting Officer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the Contracting Officer.

3.10.2 Initial Exposure Assessment: The Contractor's designated IH shall conduct an exposure assessment immediately before or at the initiation of an asbestos abatement operation to ascertain expected exposures during that operation. The assessment must be completed in time to comply with the requirements which are triggered by exposure data or the lack of a "negative exposure assessment," and to provide information necessary to assure that all control systems planned are appropriate for that operation. The assessment shall take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor which indicate the levels of airborne asbestos likely to be encountered on the job. For Class I asbestos work, until the employer conducts exposure monitoring and documents that employee on that job will not be exposed in excess of PELs, or otherwise makes a negative exposure assessment, the Contractor shall presume that employees are exposed in excess of the PEL-TWA and PEL/excursion limit.

3.10.3 Negative Exposure Assessment: The Contractor shall provide a negative exposure assessment for the specific asbestos job which will be performed. The negative exposure assessment shall be provided within 5 days of the initiation of the project and conform to the following criteria:

- a. Prior Asbestos Jobs: Where the Contractor has monitored prior asbestos jobs for the PEL and the PEL-excursion limit within 12 months of the current job, the monitoring and analysis were performed in compliance with asbestos standard in effect; and the data were obtained during work operations conducted under workplace conditions "closely resembling" the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations, the operations were conducted by employees whose training and

experience are no more extensive than that of employees performing the current job, and these data show that under the conditions prevailing and which will prevail in the current workplace there is a high degree of certainty that employee exposures will not exceed the PEL-TWA and PEL-excursion limit; or

- b. Initial Exposure Monitoring: The results of initial exposure monitoring of the current job made from breathing zone air samples that are representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee covering operations which are most likely during the performance of the entire asbestos job to results in exposures over the PELs.

3.10.4 Area Environmental Air Monitoring During Asbestos Abatement Work: Until a negative exposure assessment is provided to the Contracting Officer, demonstrating that the product or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding 0.01 f/cc as a TWA under those work conditions having the greatest potential for releasing asbestos, area environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne asbestos fiber concentrations. The monitoring shall be at least once per shift at location not limited to but including: close to the work inside a regulated work area; preabatement sampling locations; outside entrances to a regulated work area; close to glove bag operations; representative locations outside of the perimeter of a regulated work area; inside a clean room; and at the exhaust discharge point of local exhaust system ducted to the outside of a containment (if used). If the sampling outside a regulated work area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, all work shall be stopped immediately, and the Contracting Officer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the Contracting Officer.

3.10.5 Air-Monitoring Results and Documentation: Air sample fiber counting shall be completed and results provided within 24 hours after completion of a sampling period. The Contracting Officer shall be notified immediately of any airborne levels of asbestos fibers in excess of established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The results shall be given to employees affected by the data as soon as possible after receiving them. The written results shall be signed by testing laboratory analyst, testing laboratory principal and the Contractor's Designated IH. The air sampling results shall be documented on a Contractor's daily air monitoring log. The daily air monitoring log shall contain the following information for each sample:

- a. Sampling and analytical method used;
- b. Date sample collected;
- c. Sample number;
- d. Sample type (P = Personal, A = Area, C = Abatement Clearance, IRWA =

Inside regulated work area, ORWA = Outside regulated work area, DU =

Decontamination Unit, LOU = Load-out unit, AT = Access Tunnel);

- e. Sample period (start time, stop time, elapsed time (minutes);
- f. Sampling pump manufacturer - model and serial number, average flow rate (liters per minute (L/min));
- g. Total air volume sampled (liters (l));
- h. Sample results (fibers per cubic centimeter (f/cc)) and structures per square millimeter (s/mm square) if EPA methods are required for final clearance;
- i. Location/activity/name where sample collected.
- j. Calibration: Date, time, method, location, name of calibrator, signature.
- k. Sample analysis: Lab name, location, analytical method, analyst, confidence level.

In addition, print the name and provide a signature and date block for the Industrial Hygienist who conducted the sampling and for the Industrial Hygienist who reviewed the daily air monitoring log verifying the accuracy of the information.

3.11 SITE INSPECTION

While performing asbestos removal work, the Contractor shall be subject to on-site inspection by the Contracting Officer who may be assisted by or represented by quality assurance, safety and industrial hygiene personnel. If the work is found to be in violation of this specification, the Contracting Officer or his representative may issue a stop work order to be in effect immediately until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

3.12 CLEAN UP AND DISPOSAL

3.12.1 Housekeeping: Surfaces of regulated work areas shall be kept free of accumulation of asbestos-containing debris. Meticulous attention shall be given to restricting the spread of dust and debris. HEPA filtered vacuum cleaners shall be used. Regulated work areas shall not be blown down with compressed air. When asbestos abatement is complete and all ACM waste is removed from the regulated areas, and final clean up is completed, the Contracting Officer will certify the areas as safe before the warning signs and boundary warning tape can be removed. The Contractor shall dispose of such filters as asbestos contaminated materials. The Contractor and the Contracting Officer will visually inspect all surfaces within the containment for residual material or accumulated debris. The Contractor shall re-clean all areas showing dust or residual materials. The Contracting Officer shall certify in writing that the area is safe before unrestricted entry is permitted. The Government shall have the option to perform monitoring to certify the areas are safe before entry is permitted.

3.12.2 Title to Materials: Material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified and in accordance with

applicable Federal state and local, regulations.

3.12.3 Collection and Disposal of Asbestos: All ACM waste including contaminated waste water and waste water filters, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in leak-tight, containers such as double 6-mil plastic bags -see DETAIL SHEET 9A; sealed double wrapped 6-mil polyethylene sheet - see DETAIL 9B; sealed fiberboard boxes - see DETAIL SHEET 9C or other approved containers. Waste within the containers must be wetted in case the container is breached. An OSHA warning and Department of Transportation (DOT) label shall be affixed or preprinted on each bag - see DETAIL SHEET 14. Asbestos containing waste shall be disposed of at an EPA, state and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in an asbestos waste load-out unit or in a storage/transportation conveyance (i.e.; dumpster, roll-off waste boxes, etc.) in a manner as accepted by and in an area as assigned by the Contracting Officer. Procedures for hauling and disposal shall comply with 40 CFR 61 Subpart M, state, regional, and local standards.

3.12.4 Scale Weight Measurement: Scales used for measurement shall be public scales. Weighing shall be at a point nearest the work at which a public scale is available. Scales should be standard truck scales of the beam type and shall be equipped with the type registering beam and an "over and under" indicator and be capable of accommodating the entire vehicle. Scales should be calibrated and resealed as often as necessary and at least once every three months to insure continuous accuracy. Vehicles used for hauling ACM shall be weighed empty daily at such time as directed and each shall bear a plainly legible identification mark.

3.12.5 Weigh Bill and Delivery Tickets: Copies of weigh bills and delivery tickets shall be submitted to the Contracting Officer (CO) during the progress of the work. The Contractor shall furnish the CO scale tickets for each load of ACM weighed and certified. These tickets shall include tare weight, identification mark for each vehicle weighed, date, time and location of loading and unloading. Tickets shall be furnished at the point and time individual trucks arrive at the work site. A master log of all vehicle loading shall be furnished for each day of loading operations. Before the final statement is allowed, the Contractor shall file with the CO certified weigh bills and/or certified tickets and manifests of all ACM actually disposed by the Contractor for this contract.

3.12.6 Asbestos Waste Shipment Record: The Contractor shall complete and provide final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 40 61 Subpart M and other required state waste manifest shipment records within 3 days of delivery to the landfill. Each Waste Shipment Record shall be signed and dated by the generator, the waste transporter and disposal facility operator.

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet 1 of 1

1. WORK TASK DESIGNATION NUMBER 1
2. LOCATION OF WORK TASK **PIPE INSULATION (16 ELBOWS)**

3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: 16 ELBOWS GROUND FLOOR CENTRAL PORTION OF CONFERENCE ROOM

-
- Type of Asbestos Chrysotile
 % asbestos content Varies
4. ABATEMENT TECHNIQUE TO BE USED Removal
 5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK III
 6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
 Friable X Non-friable Category I Non-friable Category II
 7. FORM and CONDITION OF ACM: GOOD FAIR POOR X
 8. QUANTITY: 16 PIPE ELBOWS
 9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK
 10. SET-UP DETAIL SHEET NUMBERS
 FOR WORK TASK 9A, 11, 14, 15, 19, 45

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPA friability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
 Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to

be used. There is only one Response Action Detail Sheet for each abatement task.

10) Set-up Detail Sheets indicate containment and control methods used in support of the response action (referenced in the selected Response Action Detail Sheet)

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet_1_ of 2

1. WORK TASK DESIGNATION NUMBER 2
2. LOCATION OF WORK TASK **MASTIC UNDERNEATH CARPET GROUND FLOOR NORTHER PORTION**
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: MASTIC

Type of Asbestos Chrysotile
% asbestos content
4. ABATEMENT TECHNIQUE TO BE USED Removal
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK III
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable X Non-friable Category I Non-friable Category
7. FORM and CONDITION OF ACM: GOOD FAIR POOR X
8. QUANTITY: SQUARE FT. **2,300 SQ FT**
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK 5, 8, 9A, 11, 14, 15, 19, 20, 21, 22, 23, 45

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPA friability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.

10) Set-up Detail Sheets indicate containment and control methods used in support of the response action (referenced in the selected Response Action Detail Sheet)

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet_1_ of _3__

1. WORK TASK DESIGNATION NUMBER ____3____
 LOCATION OF WORK TASK **FLOOR TILE BASEMENT, SOUTHERN PORTION, EQUIPMENT ROOM SOUTHEASTERN PORTION**
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: VAT WITH MASTIC

 Type of Asbestos Chrysotile_____
 % asbestos content PACM_____
4. ABATEMENT TECHNIQUE TO BE USED Removal_____
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK _____
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
 Friable ____ Non-friable Category I ____ Non-friable Category III_
7. FORM _____ and CONDITION OF ACM: GOOD X FAIR ____ POOR ____
8. QUANTITY: SQUARE FT. 4,400 SQUARE FEET
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK _____
10. SET-UP DETAIL SHEET NUMBERS
 FOR WORK TASK

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPA friability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
 Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.
- (10) Set-up Detail Sheets indicate containment and control methods used in support of the response action (referenced in the selected Response Action Detail Sheet)

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet 1 of 4

1. WORK TASK DESIGNATION NUMBER 4
LOCATION OF WORK TASK **FLOOR TILE MEZZANINE AREA.**
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: VAT WITH MASTIC_

Type of Asbestos CHRYSTILE
% asbestos content 10-15%
4. ABATEMENT TECHNIQUE TO BE USED Removal
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK I
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable X Non-friable Category I Non-friable Category III
7. FORM and CONDITION OF ACM: GOOD FAIR X POOR
8. QUANTITY: **560 SQUARE FEET**
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPA friability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.
- (10) Set-up Detail Sheets indicate containment and control methods used in support of the response action (referenced in the selected Response Action Detail Sheet)

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet_1_ of _5_

1. WORK TASK DESIGNATION NUMBER ____5____
LOCATION OF WORK TASK **FIREPROOFING DEBRI, GROUND FLOOR, CENTRAL PORTION, HALLWAY**
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: FIREPROOFING_

Type of Asbestos _CHRYSTILE_____
% asbestos content __10-15%_____
4. ABATEMENT TECHNIQUE TO BE USED___Removal_____
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK__I_____
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable __X_Non-friable Category I _____Non-friable Category III_____
7. FORM _____ and CONDITION OF ACM: GOOD___FAIR__X___POOR_____
8. QUANTITY: **700 SQUARE FEET**
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK_____
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPAfriability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME. Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.
- (10) Set-up Detail Sheets indicate containment and control methods used in support of

the response action (referenced in the selected Response Action Detail Sheet)

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet_1_ of _6_

1. WORK TASK DESIGNATION NUMBER ____6____
LOCATION OF WORK TASK **FLOOR TILE AND YELLOW MASTIC 1X1
WHITE W/ BLK STREAK, GROUND FLOOR, NORTHERN , MECHANICAL
ROOM.**
3. BRIEF DESCRIPTION OF MATERIAL TO BE ABATED: VAT WITH MASTIC_

Type of Asbestos _CHRYSTILE_____
% asbestos content __10-15%_____
4. ABATEMENT TECHNIQUE TO BE USED__Removal_____
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK__I_____
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable __X_Non-friable Category I ____Non-friable Category III____
7. FORM _____ and CONDITION OF ACM: GOOD__FAIR__X_POOR_____
8. QUANTITY: 400 SQUARE FEET
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK_____
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPAfriability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to

be used. There is only one Response Action Detail Sheet for each abatement task.

(10) Set-up Detail Sheets indicate containment and control methods used in support

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet_1_ of _7_

1. WORK TASK DESIGNATION NUMBER ____7____
LOCATION OF WORK **PIPE INSULATION STRAIGHT RUN 6 “ , GRAY, MECH
ROOM, ELBOWS, DEBRI BASEMENT SOUTHEASTERN PORTION_**

Type of Asbestos CHRYSTILE
% asbestos content 10-15%
4. ABATEMENT TECHNIQUE TO BE USED Removal
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK I
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable X Non-friable Category I _____ Non-friable Category III _____
7. FORM _____ and CONDITION OF ACM: GOOD FAIR X POOR _____
8. QUANTITY: **600 LINEAR FEET**
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK _____
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPA friability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME. Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet 1 of 8

1. WORK TASK DESIGNATION NUMBER 8
LOCATION OF WORK **HVAC DUCT SEALANT MATERIAL, GROUND FLOOR
NORTHERN PORTION #1 HVAC UNIT EXPANSION JOINTS**

Type of Asbestos CHRYSTOTILE
% asbestos content 10-15%
4. ABATEMENT TECHNIQUE TO BE USED Removal
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK I
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable X Non-friable Category I Non-friable Category III
7. FORM and CONDITION OF ACM: GOOD FAIR X POOR
8. QUANTITY: **25 SQUARE FEET**
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPA friability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)
- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.

TABLE 1
INDIVIDUAL WORK TASK DATA ELEMENTS

There is a separate data sheet for each individual work task.

Sheet_1_ of _9_

1. WORK TASK DESIGNATION NUMBER ____9____
LOCATION OF WORK PIPE INSULATION – **ATTIC SPACES OVER MEZZANINE
AND GROUND FLOOR AREAS CENTRAL PORTION ELBOWS, DEBRI CONCRETE
VAULT NEXT TO STAIRWAY**

-
- Type of Asbestos _CHRYSTILE_____
- % asbestos content __10-15%_____
4. ABATEMENT TECHNIQUE TO BE USED__Removal_____
5. OSHA ASBESTOS CLASS DESIGNATION FOR WORK TASK__I_____
6. EPA NESHAP FRIABILITY DESIGNATION FOR WORK TASK
Friable __X_Non-friable Category I _____Non-friable Category III_____
7. FORM _____ and CONDITION OF ACM: GOOD__FAIR__X_POOR_____
8. QUANTITY: **97 LINEAR FEET**
9. RESPONSE ACTION DETAIL SHEET NUMBER FOR WORK TASK_____
10. SET-UP DETAIL SHEET NUMBERS
FOR WORK TASK

NOTES:

- (1) Numeric sequence of individual work tasks (1,2,3,4,etc.) for each asbestos regulated work area. Each category of EPAfriability / OSHA class has a separate task.
- (2) Specific location of work
- (3) A description of material to be abated, (example: horizontal pipe, cement wall panels, tile, stucco, etc.) and the Type of asbestos (chrysotile, amosite, crocidolite, etc.) and %content.
- (4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.
- (5) Class designation: Class I, II, III, or IV (OSHA designation).
- (6) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2; (number indicates friable category) NESHAP designation).
- (7) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME.
Condition: Good = G; Fair = F; Poor = P.
- (8) Quantity of ACM in Linear Feet (ft); Square Feet (sf)

- (9) Response Action Detail Sheet specifies the material to be abated and the methods to be used. There is only one Response Action Detail Sheet for each abatement task.

TABLE 2
FORMULA FOR CALCULATION OF THE 95 PERCENT CONFIDENCE LEVEL
(Reference: NIOSH 7400)

$$\text{Fibers/cc (01.95 percent CL)} = X + [(X) * (1.645) * (CV)]$$

$$\text{Where: } X = ((E) (AC)) / ((V) (1000))$$

$$E = ((F/Nf) - (B/Nb)) / Af$$

CV = The precision value; 0.45 shall be used unless the analytical laboratory provides the Contracting Officer with documentation (Round Robin Program participation and results) that the laboratory's precision is better.

AC = Effective collection area of the filter in square millimeters

V = Air volume sampled in liters

E = Fiber density on the filter in fibers per square millimeter

F/Nf = Total fiber count per graticule field

B/Nb = Mean field blank count per graticule field

Af = Graticule field area in square millimeters

$$TWA = C1/T1 + C2/T2 = Cn/Tn$$

Where: C = Concentration of contaminant.

T = Time sampled.

TABLE 3

NIOSH METHOD 7400

PCM ENVIRONMENTAL AIR SAMPLING PROTOCOL (NON-PERSONAL)

Inside Abatement Area	5/1500 Square Feet (Notes 3 & 4)	0.45 microns	3850	2-16
Each Room in Abatement Area Less than 1500 Square Feet	1	0.45 microns	3850	2-16
Field Blank	2	0.45 microns	0	0
Laboratory Blank	1	0.45 microns	0	0

Notes:

1. Type of filter is Mixed Cellulose Ester.
2. Ensure detection limit for PCM analysis is established at 0.005 fibers/cc.
3. One sample should be added for each additional 1500 square feet.
4. No less than 5 samples are to be taken per abatement area, plus two field blanks.

TABLE 4

EPA AHERA METHOD: TEM AIR SAMPLING PROTOCOL

Location Sampled	Minimum No. of Samples	Filter Pore Size	Min. Vol. (Liters)	Sampling Rate (liters/min.)
Inside Abatement Area	5	0.45 microns	1500	2-16
Outside Abatement Area	5	0.45 microns	1500	2-16
Field Blank	2	0.45 microns	0	0
Laboratory Blank	1	0.45 microns	0	0

Notes:

1. Type of filter is Mixed Cellulose Ester.

2. The detection limit for TEM analysis is 70 structures/square mm.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ CONTRACT NO. _____
PROJECT ADDRESS _____
CONTRACTOR FIRM NAME _____
(Print) (Last) (First) (MI) Social Security Number
EMPLOYEE'S NAME _____, _____, _____ - - - - -

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAVE BEEN LINKED WITH TYPES OF LUNG DISEASE AND CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NONSMOKING PUBLIC.

Your employer's contract for the above project requires that you be provided and you complete formal asbestos training specific to the type of work you will perform and project specific training; that you be supplied with proper personal protective equipment including a respirator, that you be trained in its use; and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks, under the environmental conditions expected, while wearing the required personal protective equipment. These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you. The Contractors Designated Industrial Hygienist will check the block(s) for the type of formal training you have completed. Review the checked blocks prior signing this certification.

FORMAL TRAINING:

_____ a. For Competent Persons and Supervisors: I have completed EPAs formal Model Accreditation Program (MAP) training course, A Contractor/Supervisor that meets EPAs and this states requirements.

b. For Workers:

_____ (1) For OSHA Class I work: I have completed EPAs MAP training course, A Worker that meets EPAs and this states requirements.

_____ (2) For OSHA Class II work (where there will be abatement of more than one type of Class II materials (ie. roofing, siding, floor tile etc.): I have completed EPAs MAP training course, A Worker that meets EPAs and this states requirements.

(3) For OSHA Class II work (there will only be abatement of one type of Class II material:

_____ (a) I have completed an 8-hour training class on the elements of 29 CFR 1926 Section .1101 (k) (9)(viii) in addition to the specific work practices and engineering controls at CFR 29 Part 1926 Section .1101(g) and hands-on training.

_____ (b) I have completed EPAs MAP training course, A Worker as required for Class II work by this states requirements.

_____ (4) For OSHA Class III work: I have completed at least a 16-hour course consistent with EPA requirements for training of local education agency maintenance and custodial staff at 40 CFR 763Section .92(a)(2) and the elements of 29 CFR 1926 Section .1101(k)(9)(viii) in addition to the specific

work practices and engineering controls at 29 CFR 1926 Section .1101 and hands-on training.

_____ (5) For OSHA Class IV work: I have completed at least a 2-hr course consistent with EPA requirements for training of local education agency maintenance and custodial staff at CFR 40 Part .763(a)(1) and the elements of CFR 40 Part 1926 Section .1101 (k)(9)(viii) in addition to the specific work practices and engineering controls at CFR 29 Part 1926 Section .1101 (g) and hands-on training.

_____ c. Workers, Supervisors and the Designated Competent Person: I have completed annual refresher training as required by EPA and this state's requirements.

PROJECT SPECIFIC TRAINING:

_____ I have been provided and have completed the project specific training required by this Contract. My employer's Industrial Hygienist and Designated Competent Person supervisor conducted the training.

RESPIRATORY PROTECTION:

_____ I have been trained in accordance with the criteria in the Contractor's Respiratory Protection program. I have been trained in the dangers of handling and breathing asbestos dust and in the proper work procedures and use and limitations of the respirator(s) I will wear. I have been trained in and will abide by the facial hair policy of my employer.

RESPIRATOR FIT-TEST TRAINING:

_____ I have been trained in the proper selection, fit, use, care, cleaning, and maintenance, and storage of the respirator(s) that I will wear. I have been fit-tested in accordance with the criteria in the Contractor's Respiratory Program and have received a satisfactory fit. I have been assigned my individual respirator. I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time.

MEDICAL EXAMINATION:

_____ I have had a medical examination within the last twelve months which was paid for by my employer. The examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray. A physician made determination regarding my physical capacity to perform work tasks on the project while wearing personal protective equipment including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's Industrial Hygienist evaluated the medical certification provided by the physician and checked the appropriate blank below. The physician determined that there:

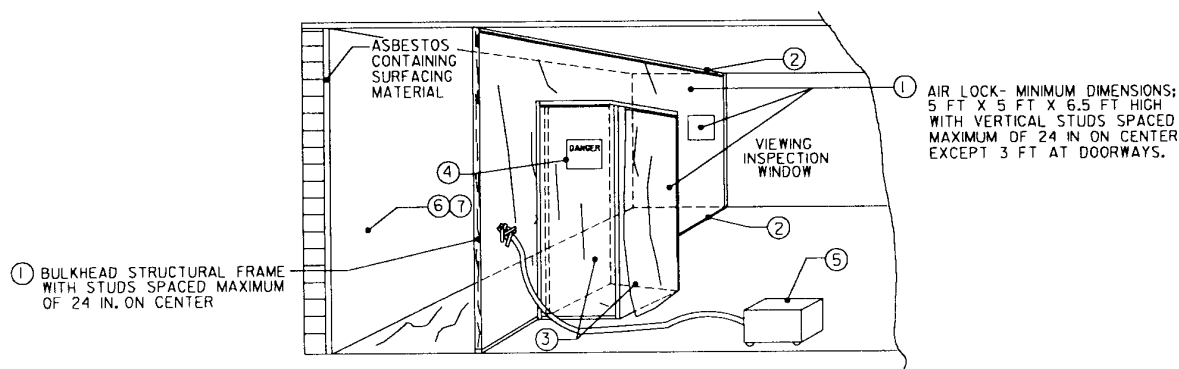
_____ were no limitations to performing the required work tasks;

_____ were identified physical limitations to performing the required work tasks.

Date of the medical examination_____

Employee Signature _____ date_____

Contractors Industrial Hygienist Signature_____ date_____



Single Bulkhead Containment Area

1. Establish work area so that unauthorized entry is prevented; see Sheet 11. Construct a structural frame for a bulkhead wall and an air lock; see Sheet 1. Bulkhead is to be parallel to the item requiring abatement. Attach structural frame to walls, floor, or ceiling as necessary for stability. Cover the frame with one layer and the floor with two layers of 6-mil polyethylene sheeting, sealing edges of polyethylene to walls, ceilings, and floor surfaces with duct tape. Install viewing inspection windows, where feasible.

2. Seal with duct tape all penetrations (typical) such as pipes, electrical conduit, or ducts.

3. Install triple 6-mil polyethylene flaps at both doorways. Place portable sprayer with clean water, disposable towels, and prelabeled disposal bag in air lock.

4. Install danger signs on outside of containment area; see Sheet 11.

5. Install HEPA vacuum. Extend hose into mini-containment area for general vacuuming, negative air, and cleaning of disposable suit.

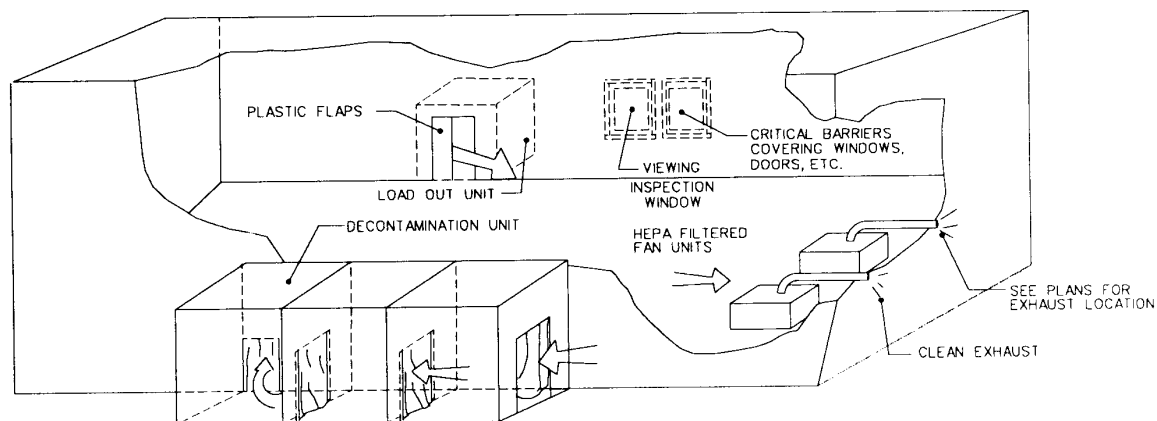
6. Accumulate all loose materials for disposal, and

place in approved container; see Sheet 9. Apply labels; see Sheet 14. Adequately wet clean all wall, floor, tool, and equipment surfaces.

7. Abatement worker must wear two disposable suits. Remove outer suit in work area and place in a plastic bag; see Sheet 9. Enter air lock.

8. In air lock, wet wipe respirator and wash hands with clean water from portable sprayer. Remove respirator and place in clean plastic bag. Proceed to remote shower where inner suit may be removed.

Final Clearance Requirements: After abatement is completed, prepare area for final clearance. Contractor and Contracting Officer will certify visual inspection of work area on Sheet 19, *Certification of Final Cleaning and Visual Inspection*. Contractor will apply lockdown encapsulant. Contract designee(s) will conduct final air clearance monitoring as required by the contract. Remove containment area upon instructions from the Contracting Officer, and treat it as asbestos-contaminated material. Place in approved container; see Sheet 9. Apply labels, see Sheet 14. Dispose of as specified in the contract.

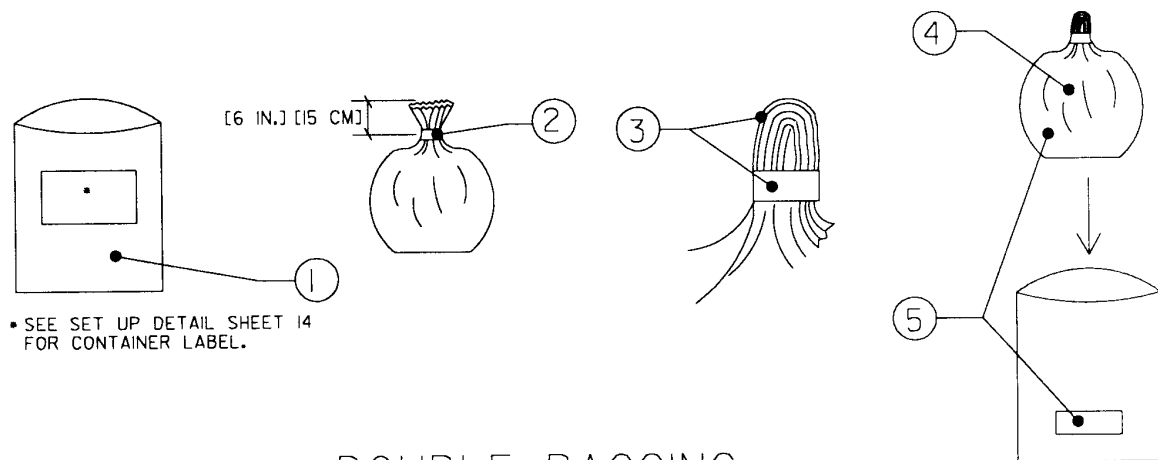


Ventilation of Containment Area and Decontamination Unit Using HEPA Filters

1. Install a ventilation system in the containment area that draws the air supply through the decontamination and load-out units; see Sheets 20 and 22.
2. Operate ventilation system 24 hours a day from start of abatement through final clearance.
3. Place at the decontamination unit entrance a pressure gauge that measures differential pressure between abatement and ambient areas. Gauge must be read hourly and logged or continuously recorded.
4. The ventilation system must create, as a minimum, a negative pressure of 0.02 inches of water inside the containment area (relative to the outside of the containment area) and must be sized for a minimum of four air changes per hour or more, as specified in the Contractor's Asbestos Hazard Abatement Plan.
5. Locate HEPA filters in order to prevent dead air pockets.
6. Exhaust filtered air to outside of building, unless otherwise approved by the Contracting Officer.

Final Clearance Requirements: For final clearance, remove ventilation system upon instruction from the Contracting Officer and relocate to equipment room of decontamination unit. Thoroughly HEPA vacuum unit and ducting. Adequately wet clean all surfaces and wheels of unit(s). Collect all waste debris and unit filters, and treat as asbestos-contaminated material, placing in approved container; see Sheet 9. Apply labels; see Sheet 14. Dispose of waste as required by the contract. Wrap unit in one layer of 6-mil polyethylene sheeting and seal with duct tape before removing from job location.

Setup Detail Sheet 8
9580

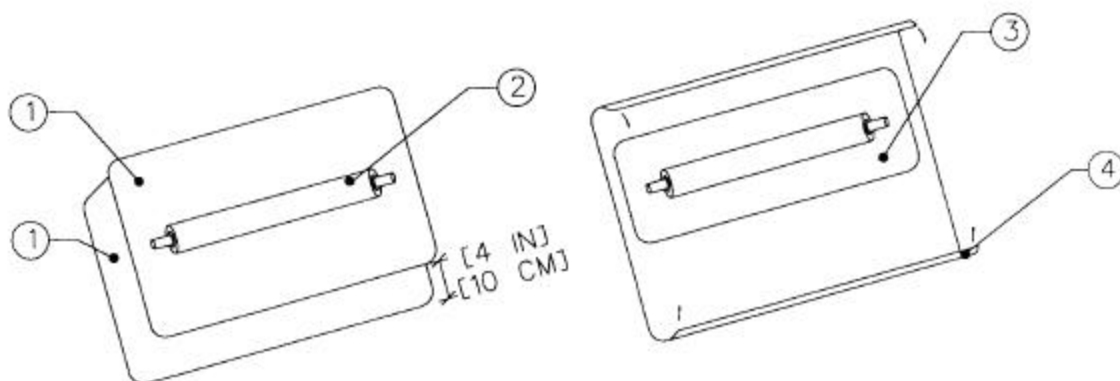


DOUBLE BAGGING

Containers - Double Bagging

1. Place the still-wet asbestos-containing and asbestos-contaminated material into a prelabeled 6-mil polyethylene bag. Do not overfill. Do not use bag for asbestos-containing or asbestos-contaminated material that could puncture the bag. (See Sheet 9C for packaging items that could puncture bags.)
2. Evacuate with HEPA vacuum and seal collapsed bag by twisting top (6 in - 15 cm) closed and wrapping with a minimum of two layers of duct tape.
3. Twist top and fold over. Apply second wrap of duct tape.
4. Adequately wet clean outside of disposal bag by wet wiping, and take bag to the equipment and staging area.
5. Place bag inside a second prelabeled 6-mil polyethylene bag.
6. Seal outer bag by repeating steps 2 and 3 above. Take bag to load-out unit; see Sheet 20.

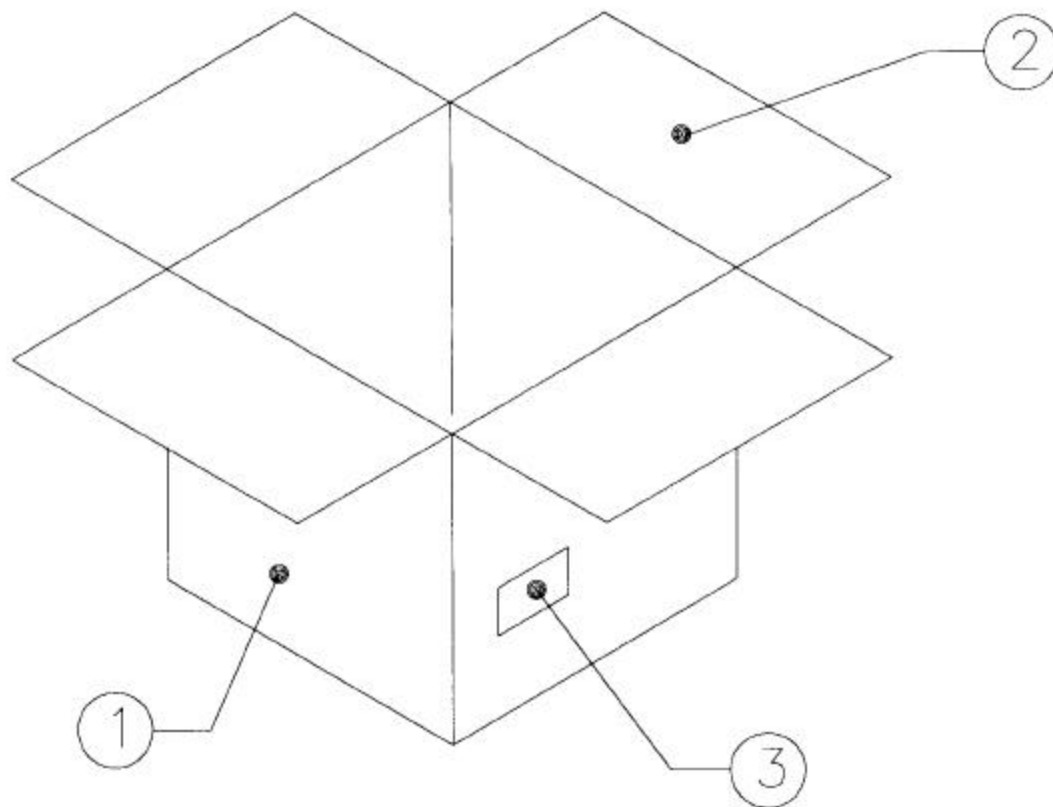
Setup Detail Sheet 9A



Containers - Leak-Tight Wrapping

1. Place two layers of 6-mil polyethylene sheet on surface so that the bottom layer is offset (10 cm or 4 in) from the top layer.
2. Place the still-wet asbestos-containing or asbestos-contaminated material that is too large (boiler, vessel, pipe segment, etc.) to be placed in disposal bags on the top layer of polyethylene.
3. Wrap the top layer tightly around the contaminated material. Seal all edges of the top layer of sheeting with duct tape. Apply labels; see Sheet 14.
4. Repeat procedure with bottom layer, including labeling. Take to load-out unit; see Sheet 20.

Setup Detail Sheet 9B

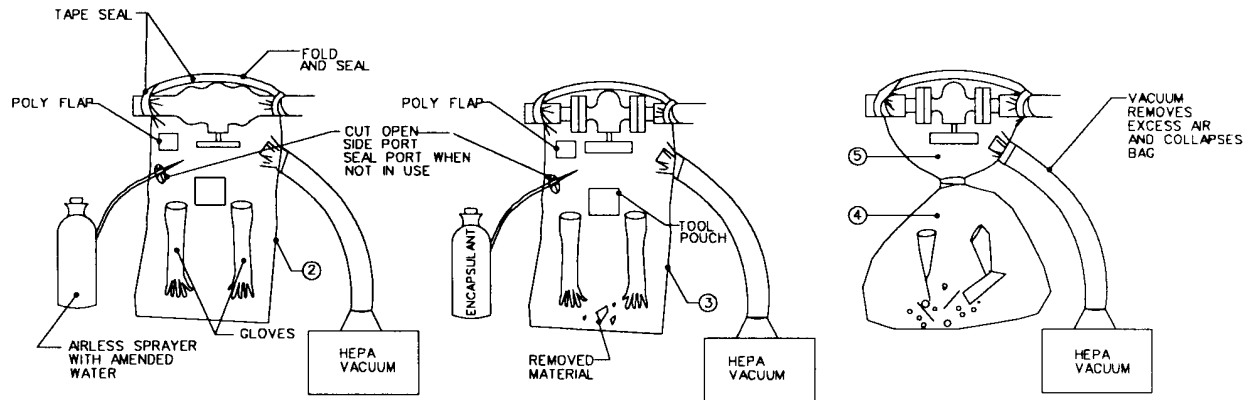


Containers - Corrugated Cardboard Boxes

1. Place still-wet asbestos-containing or asbestos-contaminated material that could puncture disposal bags into heavy-duty corrugated cardboard boxes coated with plastic or wax that will retard deterioration from moisture.

2. Close flaps and seal with duct tape.

3. Apply labels; see Sheet 14. Place box into disposal bags; see Sheet 9A. Take to load-out unit; see Sheet 20.



Glove bag

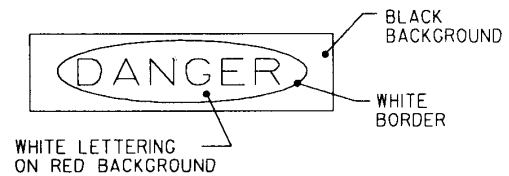
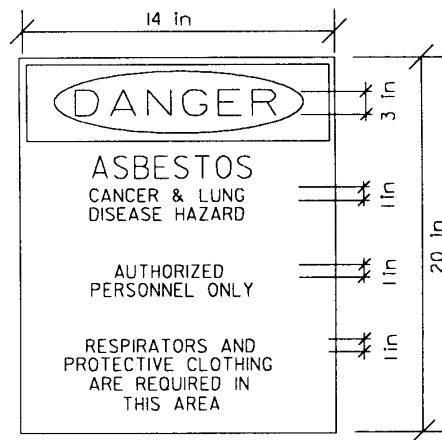
1. Construct regulated area. NOTE: Inspect for structural integrity the insulation material adjacent to section being removed, since glove bag removal procedure is not appropriate if it will cause asbestos fiber release from adjacent asbestos-containing material.
2. Put tools and rags inside glove bag. Insulation adjacent to the asbestos-containing material being removed must be adequately wet cleaned and sprayed with an encapsulant before placing glove bag over the area to be removed. Install glove bag according to manufacturer's instructions. (NOTE: Negative-air glove bags may be used if first approved by Contracting Officer. Manufacturer procedures for negative-air glove bags will vary from procedures identified on this sheet.) Install HEPA filter vacuum cleaner with hose ducted into bag. Seal with duct tape. Smoke test for leaks. Soak insulation with amended water.
3. Remove insulation and clean exposed metal surfaces. Encapsulate exposed ends of insulation and metal surfaces. Adequately wet clean glove bag surfaces to below tool pouch.

4. Grasp tools in pouch and withdraw by pulling glove inside out. Twist glove above encased tools to create a constriction, and tape constricted area with duct tape. Cut through middle of taped area so that tools and glove bag will both remain sealed. Place encased tools into tool pouch of next glove bag or decontaminate by water immersion.

5. Evacuate glove bag, using HEPA vacuum. Twist bag to create a constriction below tool pouch. Wrap constricted area with duct tape. Cut bag (4 in.) (10 cm) above constriction. Double bag cut off portion of bag; see Sheet 9. Apply labels; see Sheet 14. Cap and seal end of HEPA vacuum hose in order to prevent incidental fiber release.

6. Remove remaining portion of glove bag. Place in approve container; see Sheet 9. Apply labels; see Sheet 14. Dispose as asbestos-contaminated waste.

Final Clearance Requirements: For final clearance, Contractor and Contracting Officer will certify visual inspection of work area on Sheet 19, *Certification of Final Cleaning and Visual Inspection*.



AREA WARNING SIGNS AND WARNING TAPE

DETAIL 

Area Warning Signs and Warning Tape

1. Provide and install (4 mil) (0.10 mm) polyethylene warning tape at locations shown on the abatement area plan.
2. Warning tape is to be attached to wood or metal posts at (10 ft) (300 cm) on center. Tape must be (3 ft) (100 cm) from ground.
3. Attach both warning signs at each entrance of the work area and at (33 yd) (30 m) on center where security fencing is installed.
4. Warning signs must be in English and other languages required by the contract.
5. Install at eye level.

DANGER

CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

HAZARDOUS WASTE

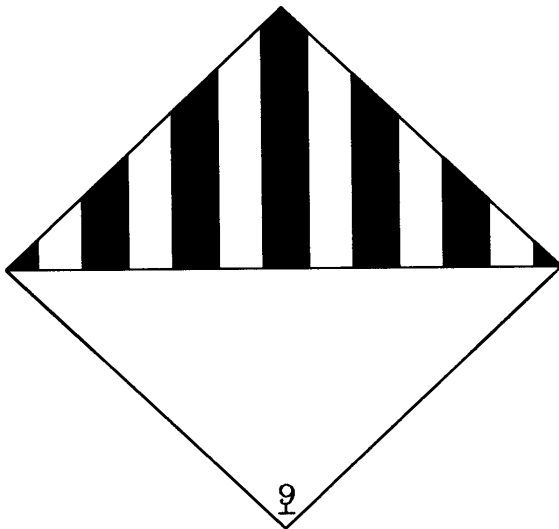
STATE AND FEDERAL LAW
PROHIBITS IMPROPER DISPOSAL.
IF FOUND, CONTACT THE NEAREST
POLICE OR PUBLIC SAFETY
AUTHORITY OR THE CALIFORNIA
DEPARTMENT OF
TOXIC SUBSTANCES CONTROL.

Generator's Name_____

Address_____

Manifest (CA only)_____

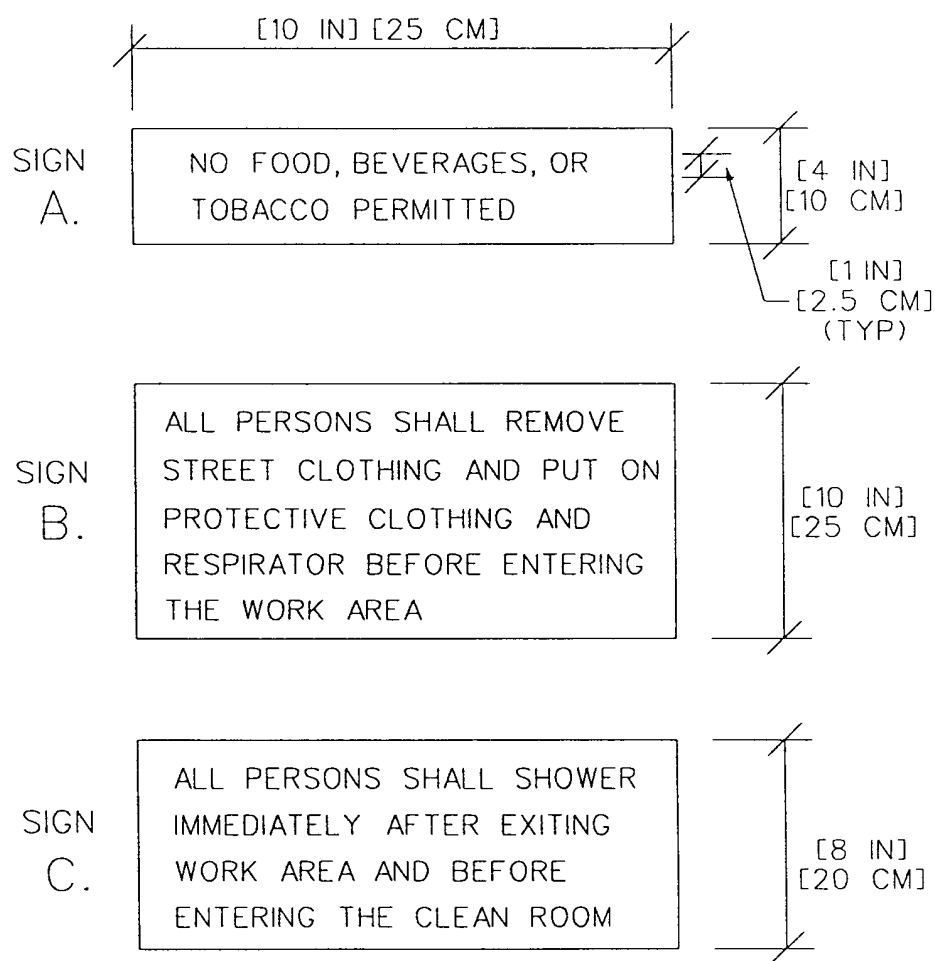
RQ, Asbestos, 9, 1



*Packing group III is not required on label; it is required on manifest.

Each side of diamond must be at least 100mm (3.9").

Decontamination Unit Signage



1. Provide signs in English and other languages required by the contract.
2. Install at eye level.

Setup Detail Sheet 15

Certification of Final Cleaning and Visual Inspection

Individual abatement tasks as identified in paragraph, Description of Work and/or Table 1: _____

In accordance with the cleaning and decontamination procedures specified in the Contractor's asbestos hazard abatement plan and this contract, the Contractor hereby certifies that he/she has thoroughly visually inspected the decontaminated regulated work area (all surfaces, including pipes, beams, ledges, walls, ceiling, floor, decontamination unit, etc.) in accordance with ASTM E1368, *Standard Practice for Visual Inspection of Asbestos Abatement Projects*, and has found no dust, debris, or asbestos-containing material residue.

BY: Contractor

Signature _____ Date _____

Print Name and Title _____

Contractor's Onsite Supervisor

Signature _____ Date _____

Print Name and Title _____

Contractor's Industrial Hygienist

Signature _____ Date _____

Print Name and Title _____

Contracting Officer Acceptance or Rejection

The Contracting Officer hereby determines that the Contractor has performed final cleaning and visual inspection of the decontaminated regulated work area (all surfaces including pipes, beams, ledges, walls, ceiling, floor, decontamination unit, etc.) and by quality assurance inspection, finds the Contractor's final cleaning to be:

G Acceptable

G Unacceptable - Contractor instructed to reclean the regulated work area.

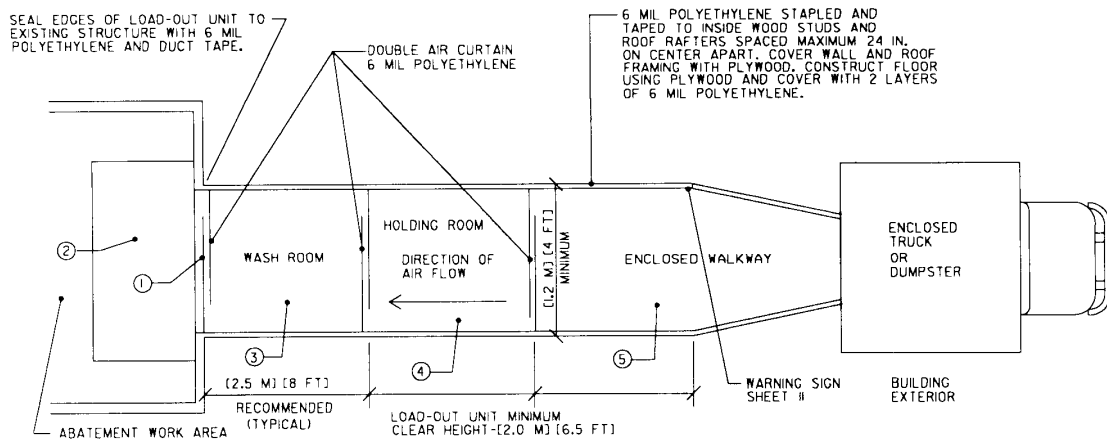
BY: Contracting Officer's Representative _____

Signature _____ Date _____

Print Name and Title _____

Setup Detail Sheet 19

9606



Load-Out Unit Floor Plan

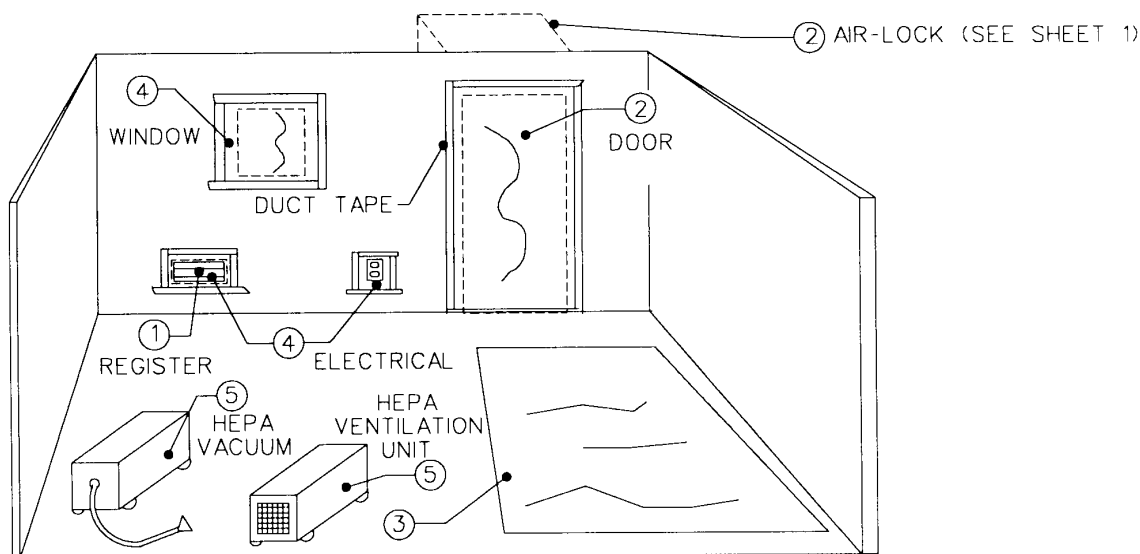
1. Abatement worker is to enter and exit abatement work area only through decontamination unit.
2. Place additional 6-mil polyethylene sheeting on top of abatement area floor. Double bag asbestos-containing material in this area before removing.
3. Wet wipe bags, equipment, and containers, and take to holding room.
4. Stage clean bags, equipment, and containers in

Final Clearance Requirements: Before breaking down load-out unit, adequately wet clean and HEPA vacuum all surfaces and prepare area for final clearance. Contractor and Contracting Officer will certify visual inspection of work area on Sheet 19, *Certification of Final Cleaning and Visual Inspection*. Break down load-out area upon instructions from Contracting Officer. Treat as asbestos-contaminated material. Place in approved container; see Sheet 9. Apply labels; see Sheet 14. Dispose of as required by the contract.

holding room until disposal worker removes them.

5. Disposal workers, wearing full protective clothing and appropriate respirator protection, carry decontaminate bags and containers through enclosed walkway and into enclosed truck or Dumpster.

Setup Detail Sheet 20



Modified Containment Area

1. Establish work area and prevent unauthorized entry; see Sheet 11. Eliminate airflow into containment area by isolating all supply and return air ducts from mechanical system.

2. Install air lock at entrance to abatement area; see Sheet 1. Air lock may be constructed either outside or inside of room. NOTE: Air lock is not required for glove bag operations.

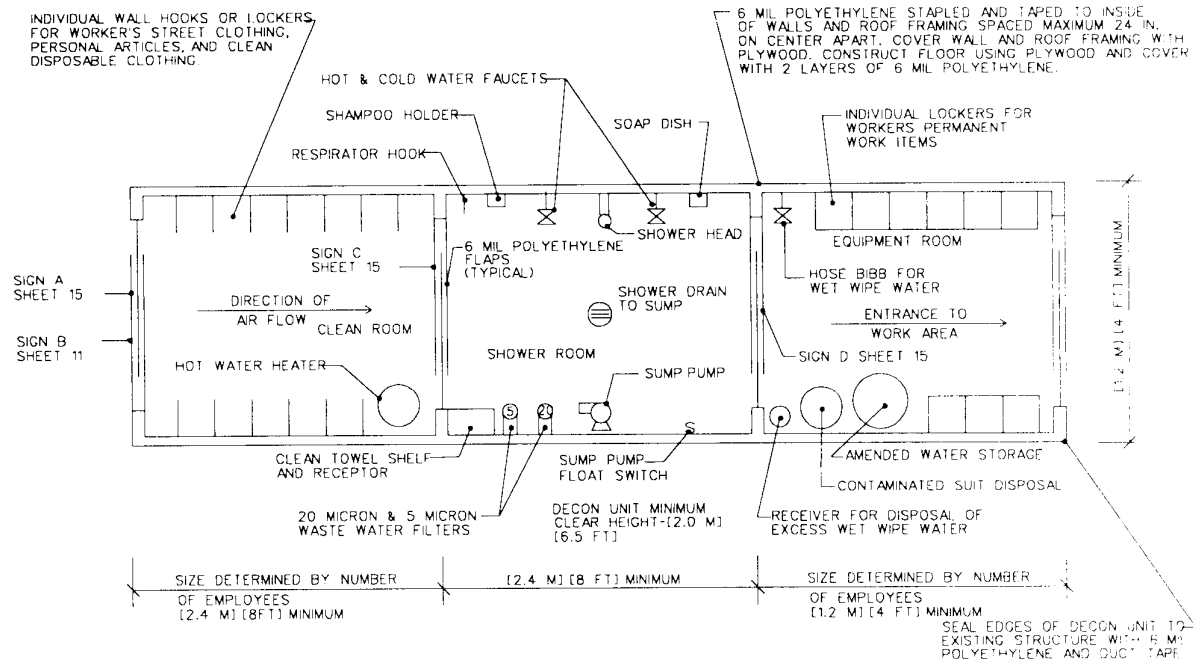
3. Install 6-mil polyethylene sheet on floor under work area.

4. Install 6-mil polyethylene (critical barrier) over all windows,, doors, wall openings, electrical outlets, etc. Provide airtight seal, using duct tape.

5. Provide a HEPA-filter vacuum cleaner and a HEPA-filter ventilation system in the work area; see Sheet 8. The ventilation system does not have to be ducted to the outside of the structure. The ventilation system shall operate 24 hours a day from start of abatement through final air-clearance monitoring. The ventilation system shall be sized to recirculate the air a minimum of four air changes per hour. For glove bag operations, provide a single HEPA ventilation unit with a measured capture velocity at least 1,500 cfm.

6. Accumulate all loose material and polyethylene from floor. Place in approved container; see Sheet 9. Apply labels; see Sheet 14. HEPA vacuum and adequately wet clean all wall, floor and equipment surfaces.

Final clearance requirements: Abatement worker must wear two disposable suits. Remove outer suit in the work area. Place suit in 6-mil disposable bag; see Sheet 9. Enter air lock. In air lock, wet wipe respirator and wash hands with clean water from portable sprayer. Remove respirator and place in clean plastic bag. Proceed to remote shower where inner suit may be removed. Prepare work area and air lock for final clearance. Contractor and Contracting Officer will certify visual inspection of work area on Sheet 19, *Certification of Final Cleaning and Visual Inspection*. Contract designee(s) will conduct final air clearance monitoring as required by the contract. Upon instructions from the Contracting Officer, remove critical barriers and HEPA ventilation units; see Sheet 8. Treat polyethylene as asbestos-contaminated material. Place in approved container; see Sheet 9. Apply labels; see Sheet 14. Dispose of as required by the contract.



Decontamination Unit Floor Plan

1. Establish work area so that unauthorized entry is prevented; see Sheets 11 and 15. Before entering the work area, all personnel shall remove their street clothing in the clean room and put on protective clothing and respirator.

2. Whenever exiting the work area, all personnel shall:

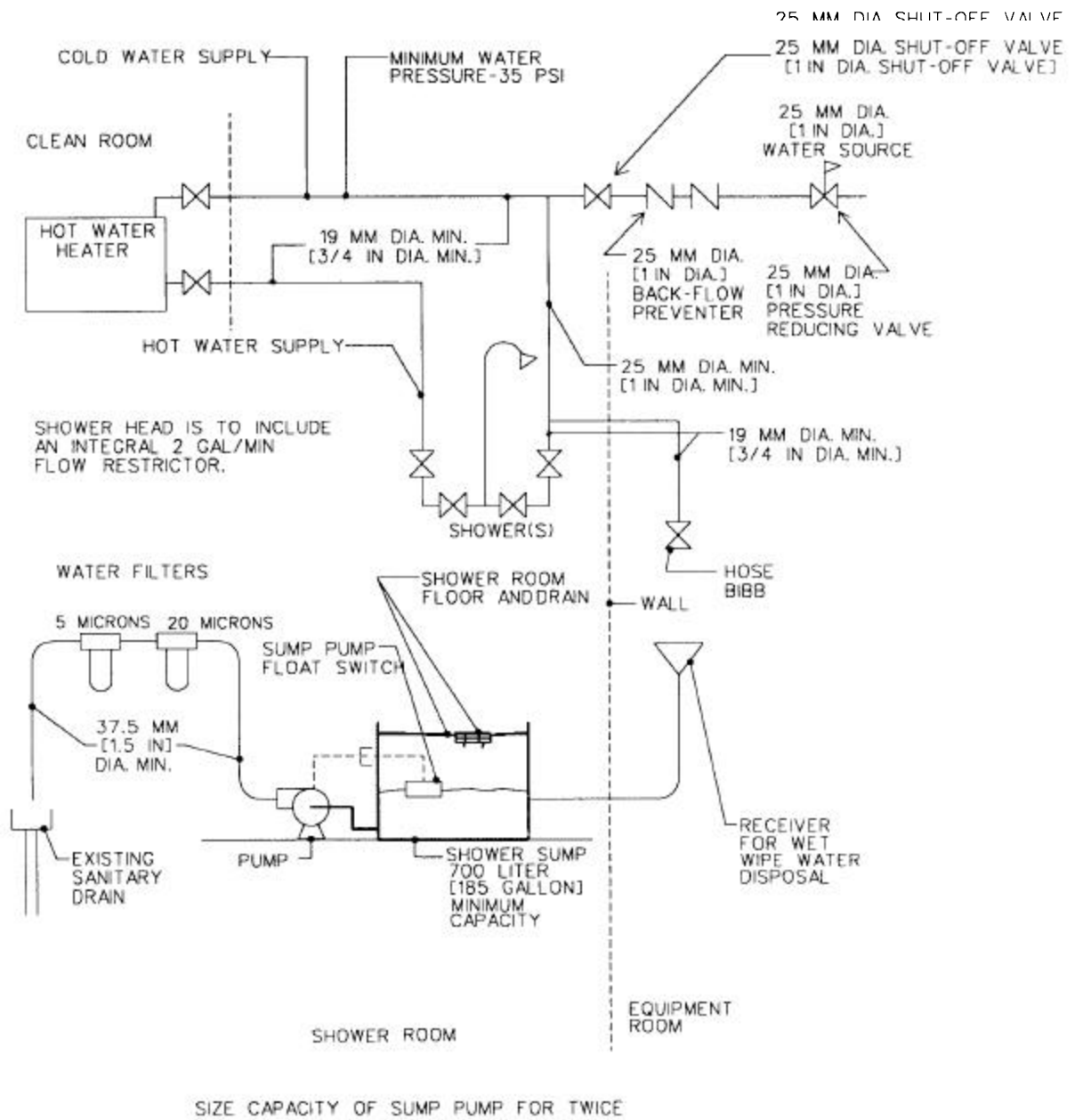
- Vacuum clothing and shoes outside equipment room.
- Remove all clothing and equipment (except respirator) in equipment room.
- Store work shoes and equipment in locker.
- With respirator still on, shower thoroughly, including hair. Then remove respirator and finish shower.
- Proceed to clean room and put on street clothes.

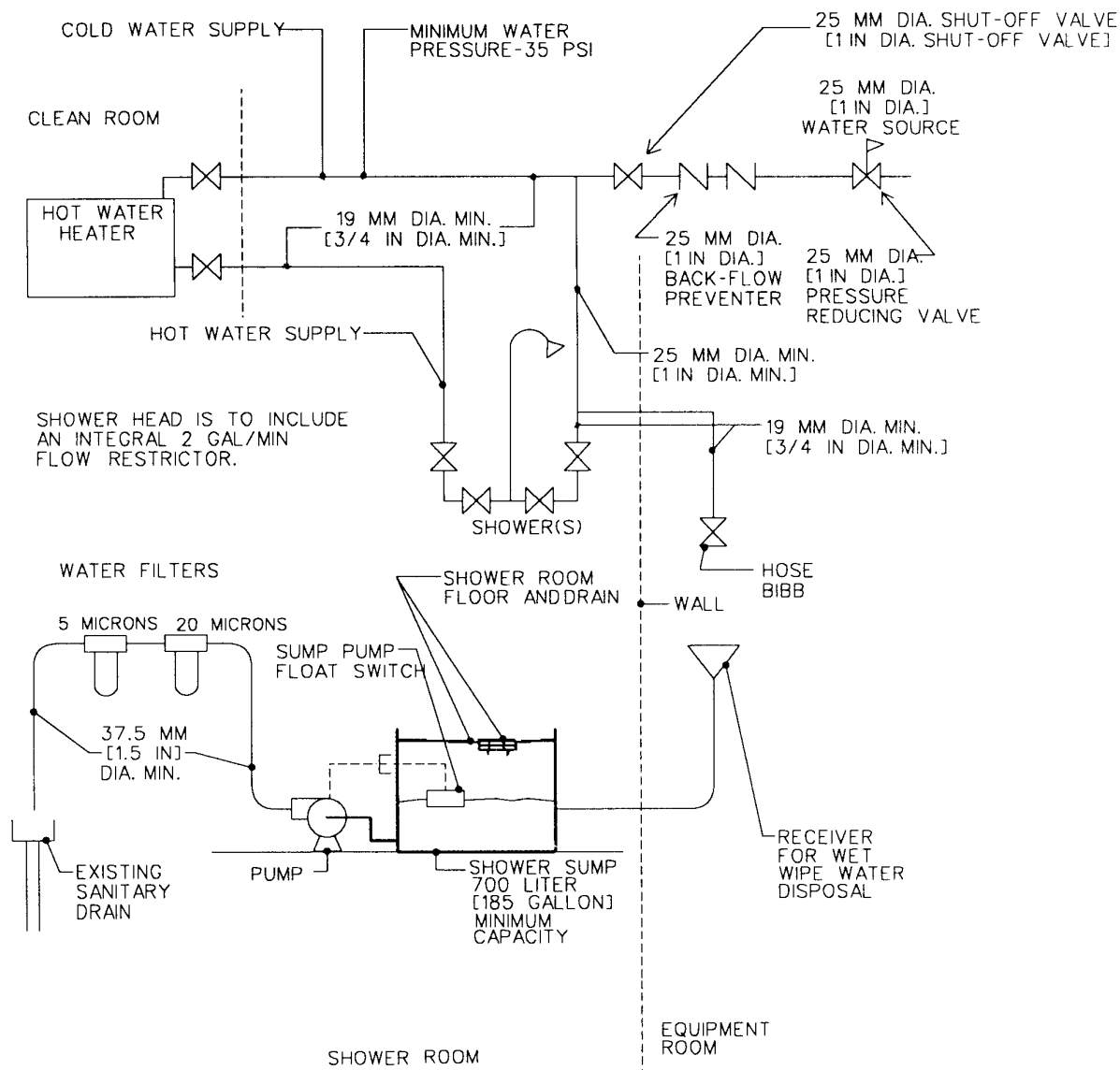
3. See Sheet 23 for minimum plumbing requirements, including wastewater filtration. Ensure that plumbing and specified filter size meet local requirements.

4. Twice daily, or more often if necessary, and before breaking down decontamination unit after abatement, adequately wet clean and HEPA vacuum all wall, floor, equipment and other surfaces. Waste collected in shower room and equipment room shall be treated as asbestos-contaminated material. Place in approved container; see Sheet 9. Apply labels; see Sheet 14.

5. Prepare for final clearance.

Final clearance requirements: Contractor and Contracting Officer will certify visual inspection of work area on Sheet 19, *Certification of Final Cleaning and Visual Inspection*. Contract designee(s) will conduct final air clearance monitoring as required by the contract. If the unit is not a prefabricated decontamination unit, apply lockdown encapsulant before final air clearance monitoring. After approval of final air clearance, break down and treat polyethylene as asbestos-contaminated material. Place in approved container; see Sheet 9. Apply labels; see Sheet 14. Dispose of as required by the contract.



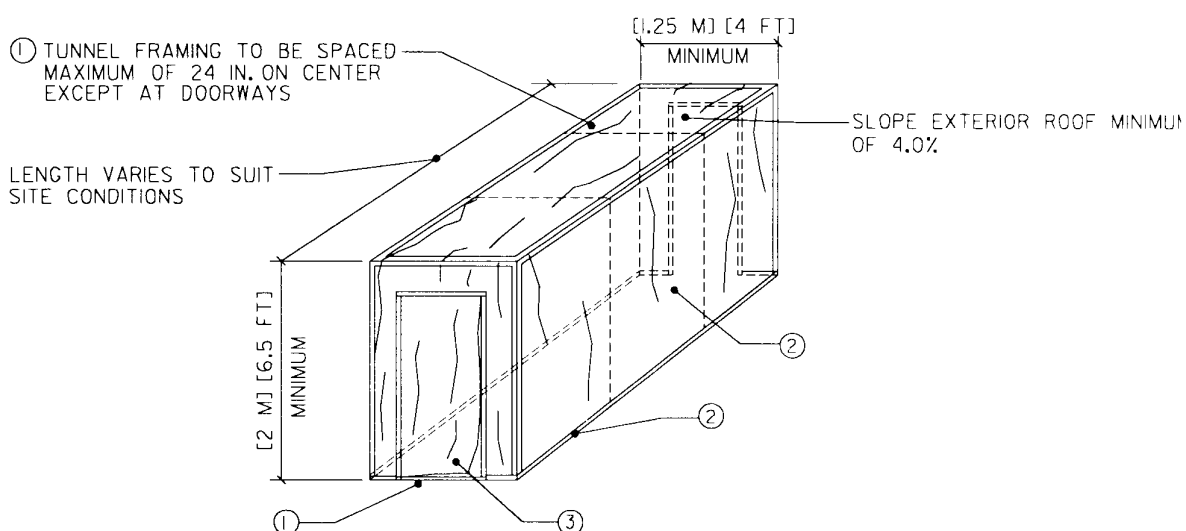


SIZE CAPACITY OF SUMP PUMP FOR TWICE
THE EXPECTED WASTE WATER FLOW.

9580

Decontamination Unit Piping Details

Setup Detail Sheet 23



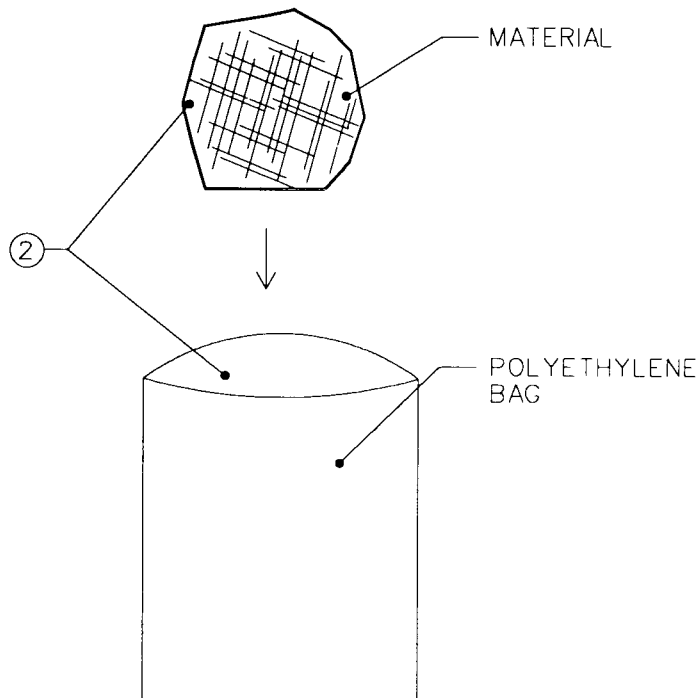
Access Tunnel

1. Construct a wood frame tunnel; cover all sides and the roof of the frame with polyethylene. NOTE: Cover all sides and roof with plywood or reinforced polyethylene if access tunnel is located outside.

2. Cover entire tunnel with 6-mil polyethylene; seal seams and edges with duct tape, making the tunnel airtight and watertight.

3. Twice daily, or more frequently if necessary, adequately wet clean and HEPA vacuum all wall, floor and equipment surfaces.

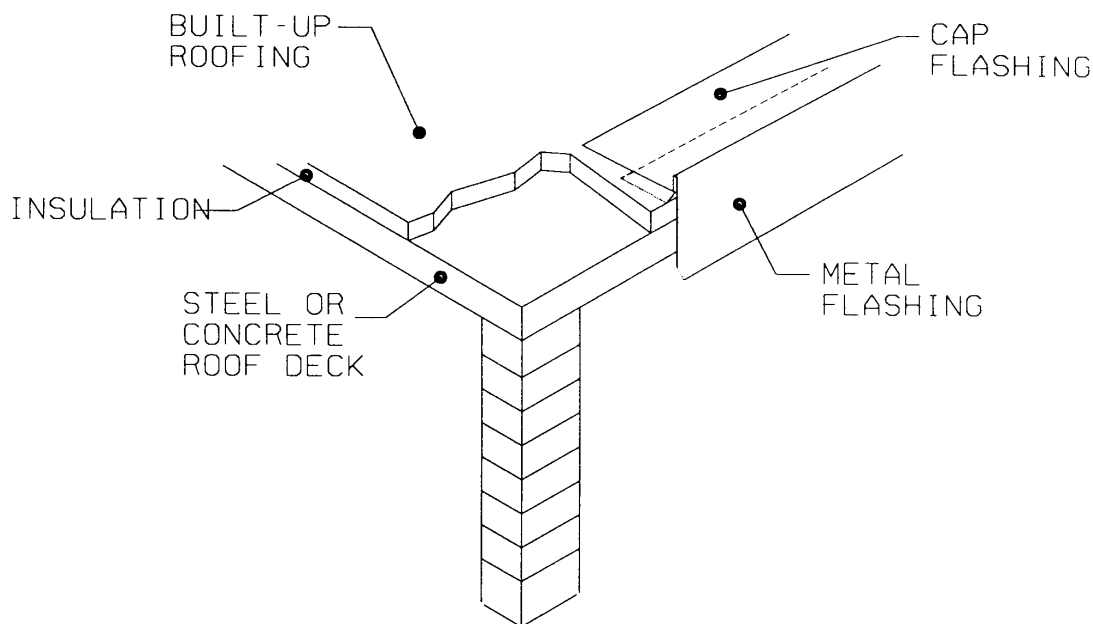
Final clearance requirements: Upon completion of abatement work, remove access tunnel in accordance with the procedures listed on Sheet 16, 17, or 18, and prepare for final clearance.



Removal of Miscellaneous Asbestos-Containing Materials

1. Establish work area so that unauthorized entry is prevented; see Sheet 11. Prepare containment area as specified on Sheet 21.
2. Adequately wet mist materials with amended water. Remove and place in approved container; see Sheet 9. Apply labels; see Sheet 14.
3. HEPA vacuum and wet wipe area in the immediate vicinity of removed materials.
4. Prepare area for final clearance.
5. Carry out final clearance requirements as specified on Sheet 21.

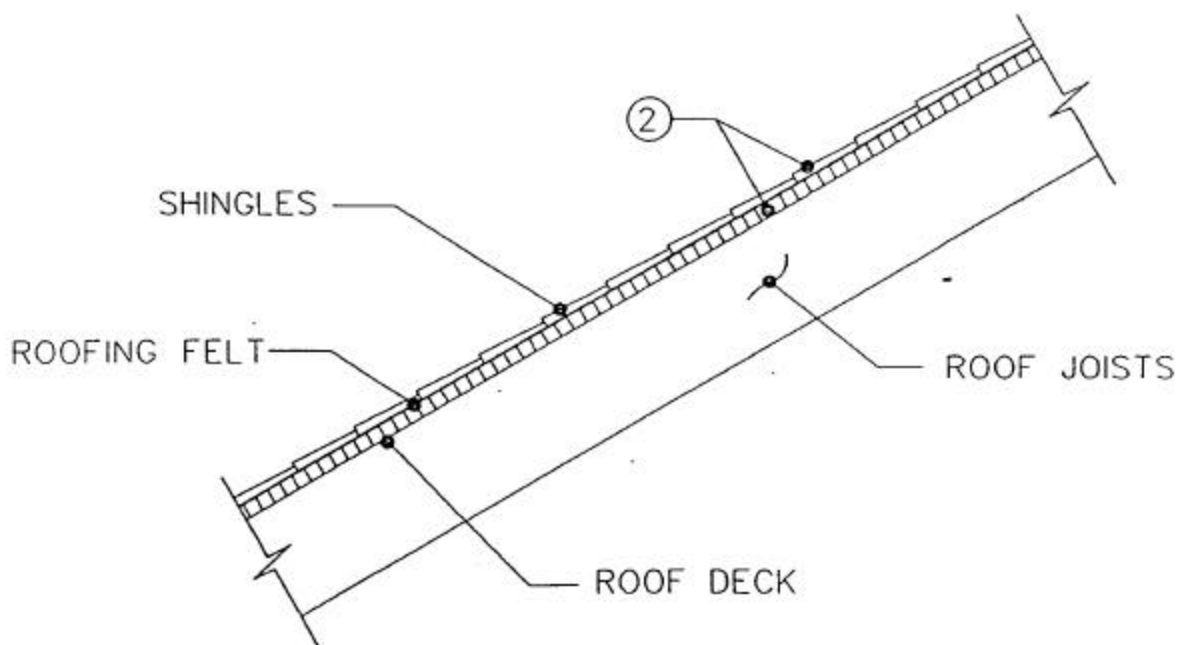
Response Action Detail Sheet 45



Removal of Built-Up Roofing and Flashing

1. No containment area is required. Establish boundaries of asbestos-regulated work area so that unauthorized entry is prevented; see Sheet 11. Provide personal protection and decontamination facilities as specified in Contractor's Asbestos Hazard Abatement Plan.
2. Remove accumulated debris.
3. Adequately wet mist flashing and built-up roofing, initially and during removal procedures. Remove flashing and built-up roofing.
4. Dispose of all materials by carefully sliding them down an enclosed chute into an enclosed Dumpster or truck that is lined with two layers of 6-mil polyethylene. When the Dumpster or truck is filled, fold the polyethylene edges over each other ("burrito" wrap) and seal with duct tape; see Sheet 9 for leak-tight wrapping. Apply labels; see Sheet 14.
5. Clean and HEPA vacuum roof.
6. Inspect and reclean area as necessary.
7. Apply tinted penetrating encapsulant to exposed roof deck, using an airless sprayer. Inspect and reapply encapsulant as necessary.
8. Prepare area for final clearance.
9. Contractor and Contracting Officer will certify visual inspection of work area on Sheet 19, *Certification of Final Cleaning and Visual Inspection*.

Response Action Detail Sheet 74

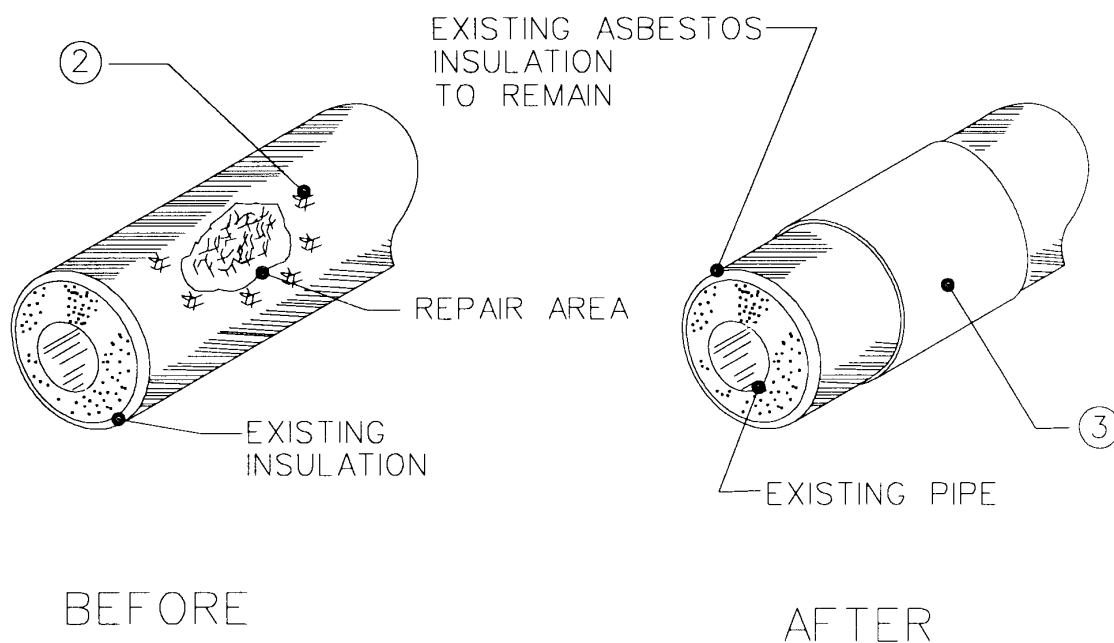


Removal of Roof, Shingles, and Underlay

1. No containment area is required. Establish boundaries of asbestos-regulated work area so that unauthorized entry is prevented, and install warning signs; see Sheet 11. Provide personal protection and decontamination facilities as specified in Contractor's Asbestos Hazard Abatement Plan.
2. Remove shingles, roofing felt, nails, and debris, using wet removal technique.
3. Dispose of all materials by carefully sliding them down an enclosed chute into an enclosed Dumpster or truck that is lined with two layers of 6-mil polyethylene. When Dumpster or truck is filled, fold the polyethylene edges over each other ("burrito" wrap) and seal with duct tape; see Sheet 9. Apply labels; see Sheet 14.
4. Clean and HEPA vacuum roof.
5. Inspect and reclean as necessary.
6. Apply tinted penetrating encapsulant to exposed roof deck, using an airless sprayer.
7. Prepare area for final clearance.
8. Contractor and Contracting Officer will certify visual inspection of work area on Sheet 19, *Certification of Final Cleaning and Visual Inspection*.

Response Action Detail Sheet 75

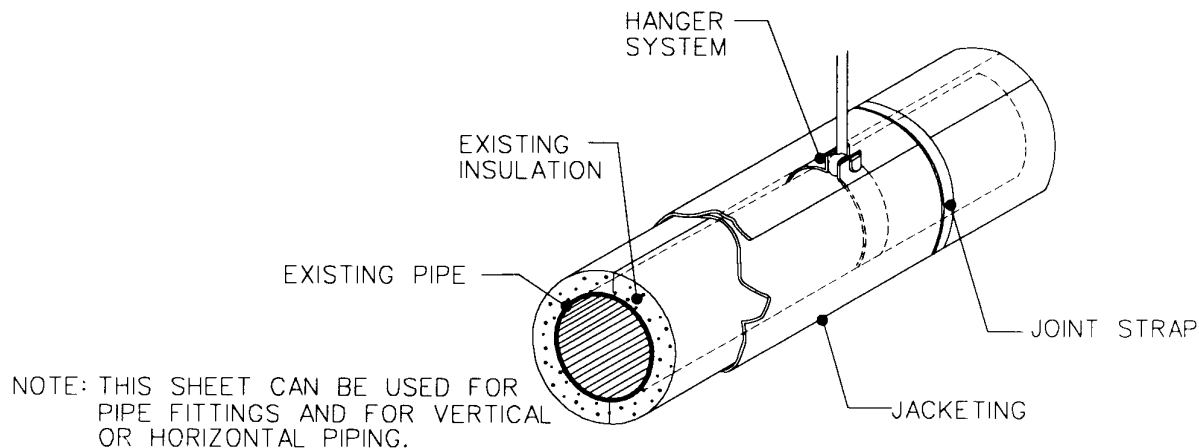
NOTE: THIS SHEET CAN BE USED FOR
PIPE FITTINGS AND FOR VERTICAL
OR HORIZONTAL PIPING.



Repair of Pipe and Fitting Insulation (Using Glove Bag)

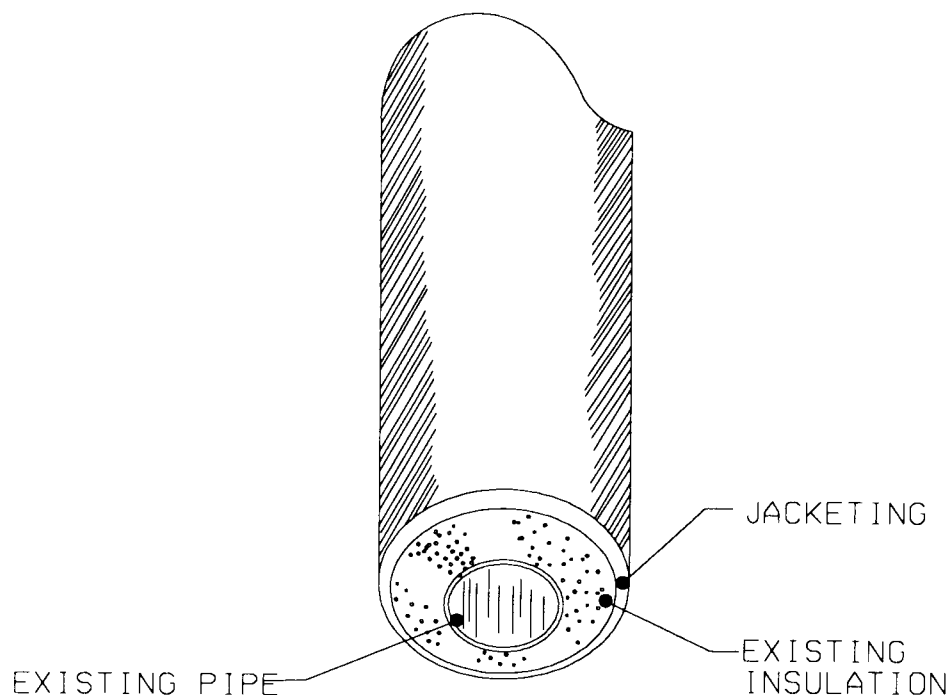
1. Install glove bag as specified on Sheet 10. Prepare modified containment area as specified on Sheet 21. Adequately wet mist insulation surface with amended water.
2. Remove any loose material in the repair area with a HEPA vacuum. Fill voids with mineral wool insulating cement.
3. Cover filled areas with a nonwoven fiberglass cloth saturated with a bridging encapsulant. Extend

- cloth a minimum of 6 inches beyond edge of damaged areas. Allow area to dry for 24 hours. Coat area with a second layer of tinted bridging encapsulant.
4. Inspect and reapply encapsulant as necessary.
5. Prepare area for final clearance.
6. Carry out final clearance requirements specified on Sheets 10 and 21.



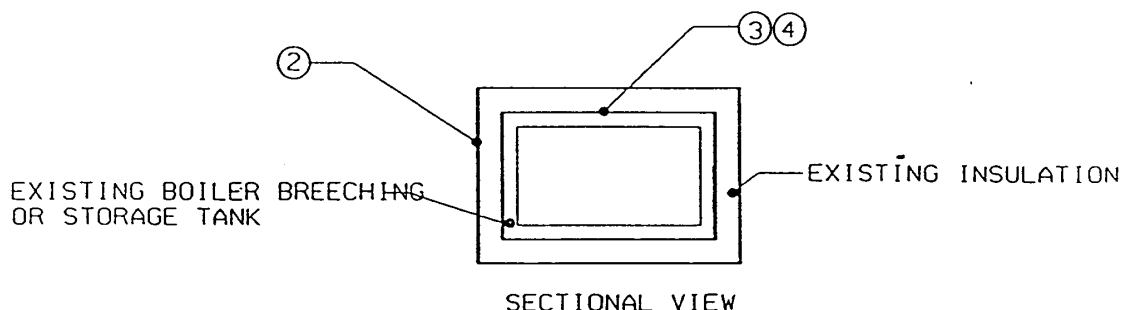
Removal of Horizontal Pipe Insulation (Using Containment Area)

1. Prepare containment area as specified on applicable Sheet 2, 3 or 4.
2. Adequately wet mist insulation surface with amended water, initially and during removal. Remove jacketing and insulation from pipe and hanger system.
3. Clean exposed surfaces by spraying with amended water and brushing.
4. Inspect and reclean as necessary.
5. Spray a tinted penetrating encapsulant on pipe and exposed ends of insulation.
6. Inspect piping and reapply encapsulant as necessary.
7. Prepare area for final visual clearance.



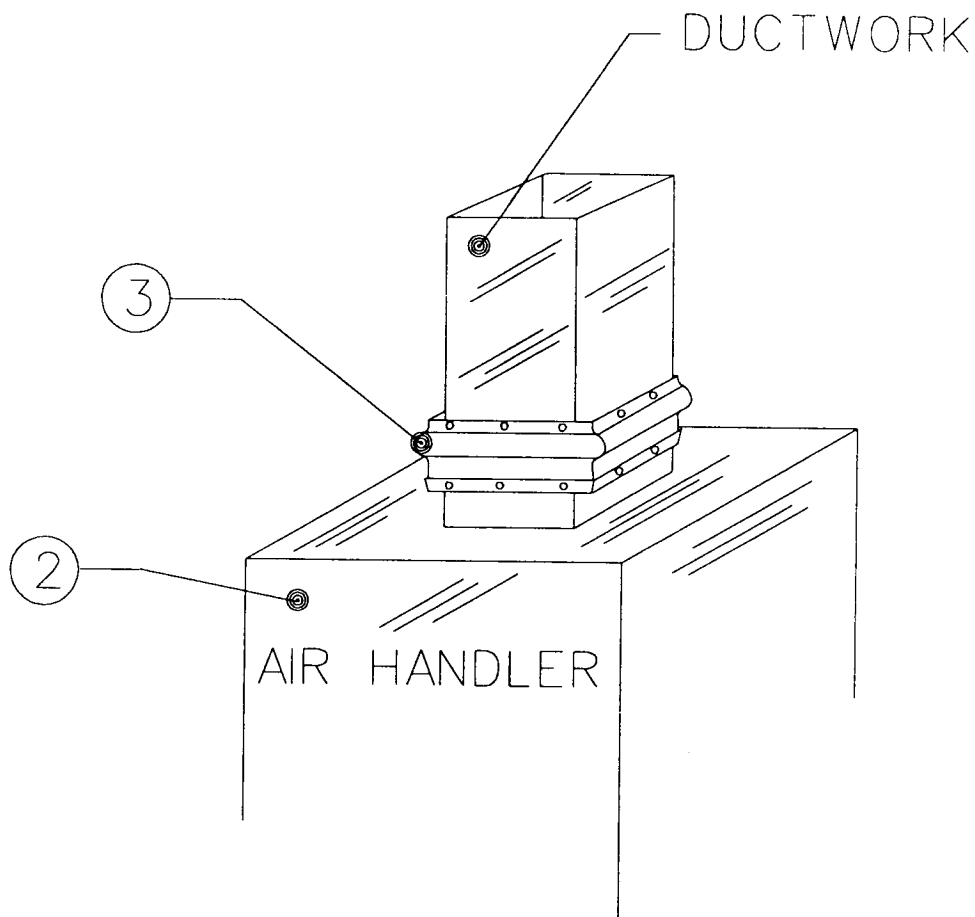
Removal of Pipe Insulation (Using Mini-Containment Area)

1. Prepare mini-containment area as specified on Sheet 7.
2. Adequately wet mist insulation surface with amended water, initially and during removal. Remove jacketing and insulation from pipe and hanger system.
3. Clean exposed surfaces by spraying with amended water and brushing.
4. Inspect and reclean area as necessary.
5. Spray a tinted penetrating encapsulant on pipe and exposed ends of insulation. Inspect and reapply as necessary.
6. Prepare area for final clearance.
7. Carry out final clearance requirements specified on Sheet 7.



Removal of Storage Tank and Boiler Breeching Insulation

1. Prepare containment areas as specified on applicable Sheet 2, 3, or 4.
2. Adequately wet mist surface with amended water, initially and during removal. Remove insulation, including reinforcing fabric, mesh, steel bands or wire, and jacketing. Place in approved containers; see Sheet 9. Apply labels; see Sheet 14.
3. Clean exposed surfaces by spraying with amended water and brushing, HEPA vacuuming, and adequately wet cleaning all surfaces.
4. Inspect and reclean area as necessary.
5. Spray a tinted penetrating encapsulant. Inspect and reapply as necessary.
6. Prepare area for final air clearance.
7. Carry out final clearance requirements specified on applicable Sheet 16, 17, or 18.



Removal of Asbestos Flex Connector

1. Prepare modified containment area as specified on Sheet 21.
2. Disconnect all electrical power to the air handler.
3. Adequately mist flex connector with removal encapsulant. Remove existing flex connector. Place in an approved container; see Sheet 9. Apply labels; see Sheet 14.
4. Clean, HEPA vacuum, and wet wipe area in the immediate vicinity of removed materials.
5. Inspect and reclean as necessary.

--end of section--

7342 E. Thomas

7342 E. Thomas

Scottsdale, Arizona 85251-7216

(800) 362-3373 (480) 990-8468 Fax

LAB #: 61639
TAT: 8hrs Fresh
Rec'd: JAN 26 A.M.
EMC USE ONLY

Rec'd: JAN 26 A.M.
(EXCISE ONLY)

(If different Location)

95th CEG/CEZ11W

225 N. Rosamond Blvd

Edwards AFB, CA 93524

Price Quoted BPA Price Listing

VISA - MASTERCARD - AMERICAN EXPRESS - (INDICATE PAY METHOD)

ALL GOVERNMENT PAYMENTS ARE TAX EXEMPT

EXP DATE: _____ SIGNATURE _____

(Failure to complete any items may cause a delay in processing or analyzing your samples)

1. TURNAROUND TIME: (8 hr rush) (1 - Day) (2 - Day) (3 - Day) (5 - Day) (6 - 10 Day)

****Prior confirmation of turnaround time is required for one day analysis or analysis of more than 50 samples per shipment.**

*** Additional charges for rush analysis (please call marketing department for pricing details).

***For no Federal Express charges, a minimum of 20 asbestos or 6 lead samples must be enclosed.

2. TYPE OF ANALYSIS: (Bulk-PLM) (Air-PCM) (Lead) (Point Count) (TEM-Air) (TEM-Bulk)

~~(If you do not indicate preference, FMC will dispose of samples 60 days from analysis)~~

4. Project Name: _____

Project Number: Bldg. 2580

[illegible]

SPECIAL INSTRUCTIONS

Relinquished by: Michelle DeGroot Date: 1-27-11
Received by: Ann Fackler Date: 1/26/2011

Relinquished by: Diana Fidenko Date: 1/26/00 Received by: [Signature] Date: 1/26/00

Relinquished by: _____	Date _____	Received by _____	Date _____
------------------------	------------	-------------------	------------

BULK MATERIAL SAMPLING DATA

Drywall/joint compound. (Conference room wall at side of doorway to room 111)	Drywall/joint compound. (Conference room wall at side of doorway to room 111)
---	---

61639

BULK MATERIAL SAMPLING DATA

Use this space for Mechanical equipment

OEHL USE ONLY									
WORKPLACE OR SITE IDENTIFIER		0	0	5	7	X	X	X	X
BASE IDENTIFIER									
ORGANIZATION		0	0	0	0	1			

Edwards AFB

WORKPLACE OR SITE

DATE COLLECTED (MM/DD/YY)

00/01/25

BUILDING LOCATION

2580

ROOM AREA

Room 111

MAIL REPORTS TO

0 0 5 7

COPULE CHANGE

COPY 1

COPY 2

SAMPLE COLLECTED BY (Name Grade AFSC)

Michelle LaComb, WG-10

Michelle LaComb

AUTOVON

527-4475

REASON FOR

A-ACCIDENT INCIDENT

C-COMPANY

F-FOLLOWUP CLEANUP

ST BAIISSON

☒ R

R-ROTTINE BACKGROU ND PERIODIC SI REVEY.

D-OTHER

SOURCE BEING SAMPLED

Possible Asbestos Containing Material

EXISTING CONTROLS (Personal protective equipment, Engineering, Administrative)

SAMPLE COLLECTION DATA

OEHL SAMPLE NUMBER

BASE SAMPLE NUMBER

A CHECK FOR

2

5

8

0

C

E

0

3

2

5

8

0

C

E

0

4

MAJOR COMPONENTS

MAJOR COMPONENTS

B NAME

NOSH NO

C NAME

NOSH NO

D NAME

NOSH NO

E CHECK FOR

☐ HAZARDOUS TOXIC WASTE

MATERIAL NAME

LOT NUMBER

ANALYSIS

SPECIFICATION REF METHOD

MATERIALS NAME

Drywall/joint compound. (Room 111 above drop ceiling at door entrance to conference room)

Drywall/joint compound. (Room 111 above drop ceiling at door entrance to conference room)

461035

BULK MATERIAL SAMPLING DATA												OEHL USE ONLY											
Use this space for Miscellaneous Remarks												WORKPLACE OR SITE IDENTIFIER				00057				XXXXX			
												BASE: Edwards AFB								ORGANIZATION			
												WORKPLACE OR SITE											
DATE COLLECTED BY NAME (DD/M/YY)												BIOLOGICAL INFORMATION				ROOM AREA							
00/01/25												2580				Conference Room							
MAIL REPORTS TO (ORIGINAL)												0057											
COPY 1																							
COPY 2																							
SAMPLE COLLECTED BY (Name Grade AFSC)												Sgt. M. J. [Signature]				AUTOVON 527-4475							
REASON FOR SUBMISSION												A-ACCIDENT INCIDENT				C-COMPLAINT				F-FOLLOWUP CLEANUP			
R-ROTINE BACKGROUND PERIODIC SURVEY												O-OTHER											
SOURCE BEING SAMPLED												Possible Asbestos Containing Material											
EXISTING CONTROLS (Personal protective equipment Engineering Administrative)																							
SAMPLE COLLECTION DATA																							
OEHL SAMPLE NUMBER																							
BASE SAMPLE NUMBER												2580											
ANALYSES REQUESTED																							
MATERIAL NAME																							
LOT NUMBER																							
SPECIFICATION																							
MANUFACTURER																							
Base cove mastic. (Conference room)																							

1/26/00

ENVIRONMENTAL MANAGEMENT CONSULTANTS
BULK MATERIAL REPORT

Page 1 of 2

REPORT Laboratory Analysis: BULK MATERIAL

LAB: 61639

Methodology: EPA 600/M4-82-020

Client: EDWARDS AFB

P/O#:

Reported to: MICHELE LACOMB

Proj:

Sampled from: BLDG 2580

By: Client

Shipped via: FEDERAL EXPRESS

Received: 1/26/00 Reported: 1/26/00

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
01A	2580-CE-01 drywall lt. brown, white	Asbestos	None detected. This sample contains approx. 10% Cellulose, 90% Quartz, CaCO, CaSO, Binder
01B	2580-CE-01 joint compound white	Asbestos	None detected. This sample contains approx. 2% Cellulose, 98% Quartz, CaCO, Mica, Binder
02A	2580-CE-02 drywall lt. brown, white	Asbestos	None detected. This sample contains approx. 10% Cellulose, 90% Quartz, CaCO, CaSO, Binder
02B	2580-CE-02 joint compound white	Asbestos	None detected. This sample contains approx. 1% Cellulose, 99% Quartz, CaCO, Mica, Binder
03A	2580-CE-03 drywall lt. brown, white	Asbestos	None detected. This sample contains approx. 10% Cellulose, 90% Quartz, CaCO, CaSO, Binder

THE REPORT APPLIES TO THE STANDARDS OR PROCEDURES IDENTIFIED AND TO THE SAMPLE(S) TESTED. THE TEST RESULTS ARE NOT NECESSARILY INDICATIVE OR REPRESENTATIVE OF THE QUALITIES OF THE LOT FROM WHICH THE SAMPLE WAS TAKEN OR OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS, NOR DO THEY REPRESENT AN ONGOING QUALITY ASSURANCE PROGRAM UNLESS SO NOTED. THESE REPORTS ARE FOR THE EXCLUSIVE USE OF THE ADDRESSED CLIENT AND ARE RENDERED UPON THE CONDITION THAT THEY WILL NOT BE REPRODUCED WHOLLY OR IN PART FOR ADVERTISING OR OTHER PURPOSES OVER OUR SIGNATURE OR IN CONNECTION WITH OUR NAME WITHOUT SPECIAL WRITTEN PERMISSION. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS.

ACCREDITED BY THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY VOLUNTARY LABORATORY ACCREDITATION PROGRAM FOR SELECTED TEST METHOD FOR ASBESTOS. THE ACCREDITATION OR ANY REPORTS GENERATED BY THIS LABORATORY IN NO WAY CONSTITUTES OR IMPLIES PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL ANALYSES ARE DERIVED FROM CALIBRATED VISUAL ESTIMATE UNLESS OTHERWISE NOTED. POLARIZED-LIGHT IS NOT CONSISTENTLY RELIABLE IN DETECTING ASBESTOS IN FLOOR COVERINGS AND SIMILAR NON-FRIABLE ORGANICALLY BOUND MATERIALS. QUANTITATIVE TRANSMISSION ELECTRON MICROSCOPY IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO DETERMINE IF THIS MATERIAL CAN BE CONSIDERED OR TREATED AS NON-ASBESTOS-CONTAINING.

Analyst Ken Scheske

By: Kurt Kettler

NVLAP Accreditation #1926, CA ELAP #1913, TX DOH #30-0094

7342 FAST THOMAS ROAD SCOTTSDALE, ARIZONA 85251-7216 (480) 990-2069 FAX: (480) 990-8468

1/26/00

ENVIRONMENTAL MANAGEMENT CONSULTANTS
BULK MATERIAL REPORT

Page 2 of 2

REPORT Laboratory Analysis: BULK MATERIAL

Client: EDWARDS AFB

Reported to: MICHELE LACOMB

Sampled from: BLDG 2580

Shipped via: FEDERAL EXPRESS

LAB: 61639

Methodology: EPA 600/M4-82-020

P/O#:

Proj:

By: Client

Received: 1/26/00 Reported: 1/26/00

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
03B	2580-CE-03 joint compound white	Asbestos	None detected. This sample contains approx. 1% Cellulose, 99% Quartz, CaCO, Mica, Binder
04A	2580-CE-04 drywall lt. brown, white	Asbestos	None detected. This sample contains approx. 10% Cellulose, 90% Quartz, CaCO, CaSO, Binder
04B	2580-CE-04 joint compound white	Asbestos	None detected. This sample contains approx. 2% Cellulose, 98% Quartz, CaCO, Mica, Binder
05	2580-CE-05 base cove mastic brown	Asbestos	None detected. This sample contains approx. 5% Wollastonite, 95% CaCO, Binder

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Analyst: Ken Scheske

By: Kurt Kettler

NVLAP Accreditation #1926, CA ELAP #1913, TX DOH #30-0094

7342 EAST THOMAS ROAD SCOTTSDALE, ARIZONA 85251-7216 (480) 990-2069 FAX (480) 990-8468

7342 E. Thomas

(800) 362-3373 (480) 990-8468 Fax

LAB #: 60721
TAT: 1 day Rush
Rec'd: JAN 28 A.M.
(EAC USE ONLY)

(If different Location)

FADE

Price Quoted: BPA Price Listing

ALL GOVERNMENT PAYMENTS ARE TAX EXEMPT

18-

(Failure to complete any items may cause a delay in processing or analyzing your samples)

1. TURNAROUND TIME: (8 hr rush)

*****Additional charges for rush analysis (please call marketing department for pricing details).

*****Additional charges for rush analysis (please call marketing department for pricing details).

*****For no Federal Express charges, a minimum of 20 asbestos or 6 lead samples must be enclosed.

2. TYPE OF ANALYSIS. (Bulk-PLM)

(Air-PCM) (Lead)

(Point Count)

(TEM-Air)

(TEM-Bulk)

3. DISPOSAL INSTRUCTIONS

(If you do not indicate preference, E.V.C. will dispose of samples 60 days from analysis)

4. Project Name:

Project Number: Bldg. : 2580

[illegible]

SPECIAL INSTRUCTIONS:

Relinquished by: ALLIANCE Date: 12/2/2011

Date 1-27-00

Received by Ant-Tallos

Date: 128/0

Relinquished by Deborah

Date: 12/8/20

Received by

Date: 1-28-00

Relinquished by

Index

Received by

Date:

61721

BU LN MATERIAL SAMPLING DATA										OEHL USE ONLY									
Use this space for Material Sampling										WORKPLACE OR SITE FOR SITE									
										BASIS									
										Edwards AFB									
										WORKPLACE FOR SITE									
										ORGANIZATION									
DATE COLLECTED: 00/01/27										BIOLOGICAL AGENCY									
00/01/27										2580									
DATE COLLECTED BY: Name Code A101										ROOM AREA									
Michele LaComb, WG-10										Conference Room									
REASON FOR: A-ACCIDENT IDENTIFY C-COVER ANI F-FOLLOW UP CLEANUP										AUTOVON									
SUBMISSION: R R-ROUTINE BACKGROUND PERIODIC SURVEY O-OTHER										527-4475									
SOURCE BEING SAMPLED: Possible Asbestos Containing Material										DEHL PID									
EXISTING CONTROLS (Personal protective equipment Engineering Administrative)																			
SAMPLE COLLECTION DATA																			
OEHL SAMPLE NUMBER																			
BASE SAMPLE NUMBER																			
ANALYSES REQUESTED																			
MATERIAL NAME																			
LOT NUMBER																			
SSN (ESSN)																			
SPECIFICATION (MIL or FLDP)																			
MANUFACTURER NAME																			
DESCRIPTION OF MATERIAL (Sample placed because)		Mastic. (Conference room behind chalkboards)																	
SPREAD SHEET		Mastic. (Conference Room behind chalkboards)																	
SAMPLES																			
COMMENTS																			

AF FORM 2751

1/28/00

ENVIRONMENTAL MANAGEMENT CONSULTANTS
BULK MATERIAL REPORT

Page 1 of 1

REPORT Laboratory Analysis: BULK MATERIAL

Client: EDWARDS AFB

Reported to: MICHELE LACOMB

Sampled from: BLDG 2580

Shipped via: FEDERAL EXPRESS

LAB: 61721

Methodology: EPA 600/M4-82-020

P/O#:

Proj:

By: Client

Received: 1/28/00 Reported: 1/28/00

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
01	2580-CE-01 mastic dk. yellow	Asbestos	None detected. This sample contains approx. 100% Quartz, CaSO, Binder

02	2580-CE-02 mastic dk. yellow	Asbestos	None detected. This sample contains approx. 2% Cellulose, 98% Quartz, CaSO, Binder
----	------------------------------------	----------	---

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Analyst Brad Yanbin Ai

By: Kurt Kettler

NVLAP Accreditation #1926, CA ELAP #1913, TX DOH #30-0094

7342 EAST THOMAS ROAD SCOTTSDALE, ARIZONA 85251-7216 (480) 990-2069 FAX (480) 990-8468

62910

8 hrs Rush

MAR 17 A.M.

(If different Location)

225 N. Rosamond Blvd.
Edwards AFB, CA 93522

Price Quoted: BPA Price Listing

ALL GOVERNMENT PAYMENTS ARE TAX EXEMPT.

EXP DATE:

SIGNATURE

(Failure to complete any items may cause a delay in processing or analyzing your samples)

8 hr rush)

Day (2 - Day) (3 - Day) (5 - Day) (6 - 10 Day)

*****Additional charges for rush analysis (please call marketing department for pricing details).

*Additional charges for rush analysis (please call marketing department for pricing details).

*For no Federal Express charges, a minimum of 20 asbestos or 6 lead samples must be enclosed.

~~IS: (Bulk-PLM)~~

S: (Dispose of samples at EMC) / (R₂)

(If you do not indicate preference, EMC will ~~dispose~~ of samples 60 days from analysis).

9

Project Number: Bldg. 2580

[illegible]

INSTRUCTIONS:

Date

Date: 7/7/00

Blank page

Date: 5/11/02

Harold

Date: 21/10

122

Date: 3/11/20

Date:

Received by

Date:

62910

BULK MATERIAL SAMPLING DATA

(Use this space for Mechanical imprint)

OEHL USE ONLY											
WORKPLACE OR SITE IDENTIFIER	0	0	5	7		X	X	X	X		
BASE Edwards AFB										0	0
WORKPLACE OR SITE										0	1

ORGANIZATION

DATE COLLECTED (YYMMDD)

000314

BLDG NO/LOCATION

2580

ROOM/AREA

1st floor

MAIL REPORTS TO (CIRCLE IF CHANGE)	ORIGINAL	0	0	5	7
	COPY 1				
COPY 2					

SAMPLE COLLECTED BY (Name, Grade AFSC)

Michele LaComb, WG-10

SIGNATURE

Michele LaComb

AUTOVON

527-4475

REASON FOR

A-ACCIDENT/INCIDENT

C-COMPLAINT

F-FOLLOWUP/CLEANUP

SUBMISSION

R

R-ROUTINE BACKGROUND/PERIODIC SURVEY

O-OTHER

SOURCE BEING SAMPLED

Possible Asbestos Containing Material

EXISTING CONTROLS (Personal protective equipment, Engineering, Administrative)

SAMPLE COLLECTION DATA

OEHL SAMPLE NUMBER																				
	2	5	8	0	C	E	0	1	2	5	8	0	C	E	0	2				
BASE SAMPLE NUMBER	2	5	8	0	C	E	0	1	2	5	8	0	C	E	0	2				
ANALYSES REQUESTED	A	CHECK FOR																		
	B	NAME																		
		NIOSH NO																		
	C	NAME																		
		NIOSH NO																		
D	NAME																			
	NIOSH NO																			
E	CHECK FOR																			
	HAZARDOUS/TOXIC WASTE																			
	HAZARDOUS/TOXIC WASTE																			
MATERIAL NAME																				
LOT NUMBER																				
NSN (ESSN)																				
SPECIFICATION (MIL or FED)																				
MANUFACTURER'S NAME																				
DESCRIPTION OF MATERIAL	Pipe Insulation Elbow. (Elbow above drop ceiling on 1st floor directly below air traffic control break room sink)																			
USAGI - Heated, Pressed	Unknown material. (Debris in cable tray on 1st floor directly below sink in air traffic control break room)																			
STORAGE																				
SAMPLES	OEHL SAMPLE NO																			
	BASE SAMPLE NO																			
SAMPLE TYPE																				

COMMENTS

AF FORM 2751

JAN 81

102910

BULK MATERIAL SAMPLING DATA

(Use this space for Mechanical imprint)

OEHL USE ONLY		WORKPLACE OR SITE IDENTIFIER	0	0	5	7	X	X	X	X	0	0	0	1
BASE		Edwards AFB												
WORKPLACE OR SITE														
ORGANIZATION														

DATE COLLECTED (YYMMDD)

000314

BLDG NO/LOCATION
2580ROOM/AREA
1st floor

MAIL REPORTS TO (CIRCLE IF CHANGE)	ORIGINAL	0	0	5	7
COPY 1					
COPY 2					

SAMPLE COLLECTED BY (Name, Grade AFSC)

Michele LaComb, WG-10

*Michele LaComb*AUTOVON
527-4475

REASON FOR SUBMISSION

R

A-ACCIDENT/INCIDENT

R-ROUTINE BACKGROUND/PERIODIC SURVEY

O-OTHER

C-COMPLAINT F-FOLLOWUP/CLEANUP

SOURCE BEING SAMPLED

Possible Asbestos Containing Material

EXISTING CONTROLS (Personal protective equipment, Engineering, Administrative)

SAMPLE COLLECTION DATA

OEHL SAMPLE NUMBER																	
	2	5	8	0	C	E	0	3	2	5	8	0	C	E	0	4	
BASE SAMPLE NUMBER																	
ANALYSES REQUESTED																	
MATERIAL NAME																	
LOT NUMBER																	
NSN (GSN)																	
SPECIFICATION (MIL or FED)																	
MANUFACTURER'S NAME																	
DESCRIPTION OF MATERIAL (SACG, Heated brooch)																	
SPREAD (SACG) SUPPORTING SAMPLES																	

COMMENTS

Unknown material. (Debris in cable tray on 1st floor directly below sink in air traffic control break room)

Drywall/joint compound. (Wall under sink in traffic control break room)

AF

FORM JAN 81

2751

3/17/00

ENVIRONMENTAL MANAGEMENT CONSULT. TS
BULK MATERIAL REPORT

Page 1 of 1

REPORT Laboratory Analysis: BULK MATERIAL

Client: EDWARDS AFB

Reported to: MICHELE LACOMB

Sampled from: BLDG #2580

Shipped via: FEDERAL EXPRESS

LAB: 62910

Methodology: EPA 600/M4-82-020

P/O#:

Proj:

By: Client

Received: 3/17/00 Reported: 3/17/00

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
01A	2580-CE-01 pipe insulation white, gray	Asbestos	Positive. This sample contains approx. 5% Chrysotile, 30% Mineral Wool, 65% Quartz, CaSO ₄ Binder

01B	2580-CE-01 pipe wrap beige	Asbestos	None detected. This sample contains approx. 90% Cellulose, 10% Binder
-----	----------------------------------	----------	--

02	2580-CE-02 material white	Asbestos	None detected. This sample contains approx. 100% Quartz, CaSO ₄ Binder
----	---------------------------------	----------	--

03	2580-CE-03 material white	Asbestos	None detected. This sample contains approx. 100% Quartz, CaSO ₄ Binder
----	---------------------------------	----------	--

04	2580-CE-04 drywall white, tan	Asbestos	None detected. This sample contains approx. 10% Cellulose, 90% Quartz, CaSO ₄ , Mica, Binder
----	-------------------------------------	----------	--

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Analyst: Brad Yarcin A:

By: Kurt Kettler

NVLAP Accreditation #1926, CA ELAP #1913, TX DOH #30-0094

7342 EAST THOMAS ROAD SCOTTSDALE, ARIZONA 85251-7216 (480) 990-2069 FAX (480) 990-8463



Forensic Analytical

Final Report

San Francisco • Los Angeles • Minneapolis / St. Paul

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Edwards AFB
Michele LaComb
95th CEG/CEZHW
225 N. Rosamond Blvd.
Edwards AFB, CA 93524-8540

Client ID: 5918
Report Number: B011665
Date Received: 06/21/99
Date Analyzed: 06/21/99
Date Reported: 06/22/99

Job ID / Site: Call#9033, Bldg#2580.

FASI Job ID: 5918-33

Sample Number	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
---------------	------------	---------------	------------------	---------------	------------------	---------------	------------------

2580-CE-01 59925140

Layer: Beige Plaster ND
Layer: White Plaster ND
Layer: Paint ND

Total Composite Values of Fibrous Components: Asbestos:(ND) Cellulose (Trace%) Fibrous Glass (ND)
Collected on 6/18/99

2580-CE-02 59925141

Layer: White Plaster ND
Layer: Paint ND
Layer: Off-White Skimcoat/Joint Compound ND

Total Composite Values of Fibrous Components: Asbestos:(ND) Cellulose (Trace%) Fibrous Glass (ND)
Collected on 6/18/99

2580-CE-03 59925142

Layer: White Drywall ND
Layer: Off-White Skimcoat/Joint Compound ND
Layer: Paint ND

Total Composite Values of Fibrous Components: Asbestos:(ND) Cellulose (20%) Fibrous Glass (10%)
Collected on 6/18/99

2580-CE-04 59925143

Layer: Off-White Mastic ND
Layer: Off-White Skimcoat/Joint Compound ND
Layer: Paint ND
Layer: Off-White Weave ND
Layer: Brown Mastic ND

Total Composite Values of Fibrous Components: Asbestos:(ND) Cellulose (55%) Fibrous Glass (ND)
Collected on 6/18/99



Forensic Analytical

Final Report
San Francisco • Los Angeles • Minneapolis / St. Paul

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Edwards AFB
Michele LaComb
95th CEG/CEZHW
225 N. Rosamond Blvd.
Edwards AFB, CA 93524-8540

Client ID: 5918
Report Number: B011665
Date Received: 06/21/99
Date Analyzed: 06/21/99
Date Reported: 06/22/99

Job ID / Site: Call#9033, Bldg#2580.

FA SI Job ID: 5918-33

Sample Number	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
2580-CE-05	59925144						
Layer: White Drywall							
Layer: Off-White Skimcoat/Joint Compound							
Layer: Paint							
ND							
ND							
ND							

Total Composite Values of Fibrous Components: Asbestos:(ND) Cellulose (10%) Fibrous Glass (10%)
Collected on 6/18/99

2580-CE-06 59925145 ND
Layer: Brown Non-Fibrous Material

Total Composite Values of Fibrous Components: Asbestos:(ND) Cellulose (Trace%) Fibrous Glass (ND)
Collected on 6/18/99

Maïlle Antillon

Maïlle Antillon, Laboratory Supervisor, Rancho Dominguez Laboratory

Note: Limit of Quantification (LOQ) = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Analysis Request Form

BP A # F0470097A0004
P.O. #

Date: 6 / 18 / 99

95 CEC/CEZHM
225 N. Rosamond Blvd.
Edwards AFB, CA 93524

Turn Around Time: 24 hr/ 12hr

4hr / 48 hr / ext: _____

Due Date: 6 / 22 / 99 Due Time: .
am/pm

Michèle LaComb

Phone #: 805 277-4475 or 277-3803

Fact: ()

Bldg. 2580

Call #9033

Comments:

114

Please fax a preliminary copy of results as soon as the analysis is done.

Sample ID	Date/ Time	Sample Location/Description	TEST RESULTS ONLY				Sample Area or Volume
			TEST NUMBER	TEST DATE	TEST TIME	TEST RESULT	
2580-CE-01	6-18-99	Plaster	A P C				
2580-CE-02	6-18-99	Plaster	A P C				
2580-CE-03	6-18-99	Drywall/joint comp.	A P C				
2580-CE-04	6-18-99	Drywall/joint comp/mastic	A P C				
2580-CE-05	6-18-99	Drywall/joint comp.	A P C				
2580-CE-06	6-18-99	Base cove mastic	A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Supplied by:

Michelle LaComh

Case	Time
6 / 18 / 99	

Shipped via: ☒ Fed Ex ☐ Airborne ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquinistas by

ಸೌಖ್ಯವು: ತಿಳಿದು: ದಿವ್ಯ:

6-18-99 1400

140

Oct 1, 1960

Received 1999

[illegible]

Case 1:19-cv-00001 Document 1-1 Filed 07/11/19 Page 1 of 1

1011

Cre. Tit.

CONFIDENTIAL

(1)

Concordia University

[illegible]

BULK MATERIAL SAMPLING DATA

(Use this space for Mechanical imprint)

OEH USE ONLY	
WORKPLACE OR SITE IDENTIFIER	0 0 5 7
BASE	X X X X
Edwards AFB	0 0 0 1
WORKPLACE OR SITE	
ORGANIZATION	

DATE COLLECTED (YYMMDD)

990618

BLDG NO/LOCATION

2580

ROOM/AREA

Interior

MAIL REPORTS TO (CIRCLE IF CHANGE)

ORIGINAL 0 0 5 7

COPY 1

COPY 2

SAMPLE COLLECTED BY (Name, Grade AFSC)

SIGNATURE

Michele LaComb, WG-10

Michele LaComb

AUTOVON

527-4475

REASON FOR SUBMISSION ☒ R A-ACCIDENT/INCIDENT C-COMPLAINT F-FOLLOWUP/CLEANUP

O-OTHER

SOURCE BEING SAMPLED

Possible Asbestos Containing Material

EXISTING CONTROLS (Personal protective equipment, Engineering, Administrative)

SAMPLE COLLECTION DATA

OEH SAMPLE NUMBER	[Grid]																
	2	5	8	0	C	E	0	1	2	5	8	0	C	E	0	2	
BASE SAMPLE NUMBER	A	[Grid]															
	B	[Grid]															
	C	[Grid]															
	D	[Grid]															
	E	[Grid]															
ANALYSES REQUESTED	A	[Grid]															
	B	[Grid]															
	C	[Grid]															
	D	[Grid]															
	E	[Grid]															
MATERIAL NAME	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
LOT NUMBER	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
NSN (FSN)	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
SPECIFICATION (MIL or FED)	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
MANUFACTURERS NAME	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
DESCRIPTION OF MATERIAL	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
	[Grid]																
SPRINTING (etc.)	[Grid]																
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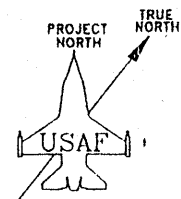
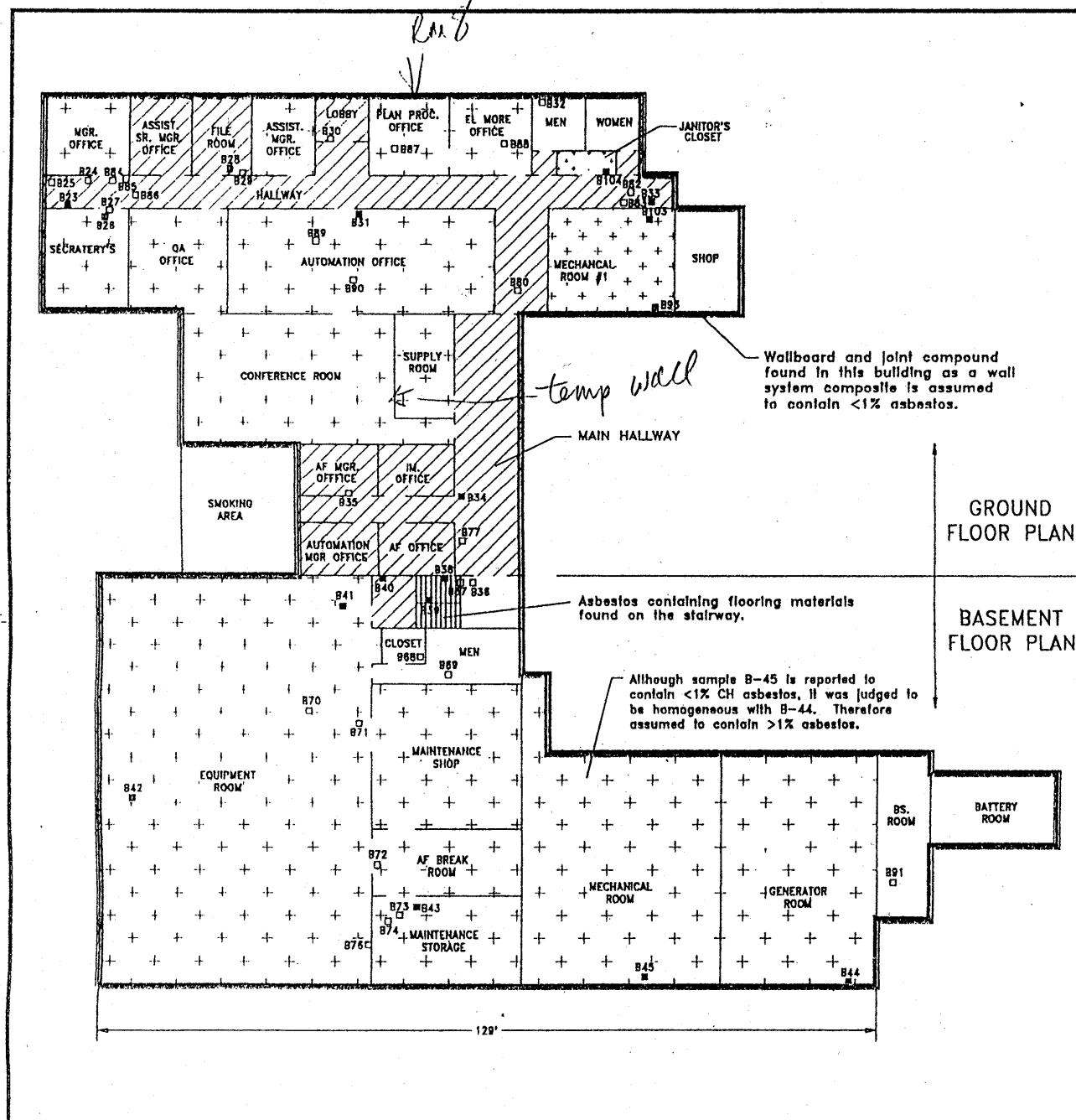
COMMENTS

Plaster. (Conference room above drop ceiling)

Plaster. (Room 8 wall behind paneling)

AF FORM 2751

1 JAN 81



NOTES: UNLESS OTHERWISE SPECIFIED

- 1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATED.
- 2) BASE MAP OBTAINED DURING FIELD INVESTIGATION.
- 3) NO SCALE IS IMPLIED FOR SAMPLE LOCATIONS.
- 4) SAMPLE NUMBERS ARE SHORTENED FOR GRAPHIC PRESENTATION PURPOSES. (e.g. SAMPLE NUMBER (BLDG NO.)-B-001 IS SHORTENED TO B1)
- 5) THIS SURVEY GIVES ONLY A GENERAL INDICATION OF LOCATIONS OF ASBESTOS-CONTAINING MATERIALS. ABSENCE OF POSITIVE ASBESTOS AREAS DOES NOT INDICATE AN AREA IS ASBESTOS FREE.
- 6) PRIOR TO ANY RENOVATION OR DEMOLITION WORK, CONTACT THE ASBESTOS MANAGER FROM THE ENVIRONMENTAL OFFICE.
- 7) OTHER ASBESTOS-CONTAINING MATERIALS MAY BE PRESENT IN INACCESSIBLE AREAS OF THE BUILDING.
- 8) THERMAL INSULATION MATERIALS (PIPES AND ASSOCIATED COMPONENTS) SHOULD BE CHECKED CAREFULLY. ASBESTOS AND FIBERGLASS ARE MIXED-IN. SEE FIGURE 1.1

LEGEND (WHERE APPLICABLE)

- A SAMPLE COLLECTED FROM ATTIC
- VERTICAL PIPES
- PIPING RUNS INSULATED WITH ASBESTOS
- PIPING RUNS INSULATED WITH FIBERGLASS
- BULK SAMPLE LOCATION (POSITIVE)
- BULK SAMPLE LOCATION (NEGATIVE)
- ASBESTOS-CONTAINING FLOOR TILE AND/OR MASTIC (>=1% ASBESTOS)
- ASBESTOS-CONTAINING FLOOR TILE AND/OR MASTIC (<1% ASBESTOS)
- /// ASBESTOS-CONTAINING FLOOR MASTIC (>1% ASBESTOS)
- ASBESTOS-CONTAINING FIREPROOFING MATERIAL (>1% ASBESTOS)



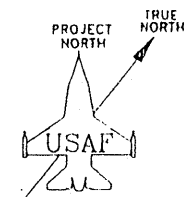
PANACEA INCORPORATED

Environmental Services

BUILDING 2580
BULK SAMPLE LOCATIONS
GROUND FLOOR AND BASEMENT
FLOOR, WALL AND CEILING PLAN

PROJECT NO. C94-008

FIGURE 1.0



NOTES: UNLESS OTHERWISE SPECIFIED

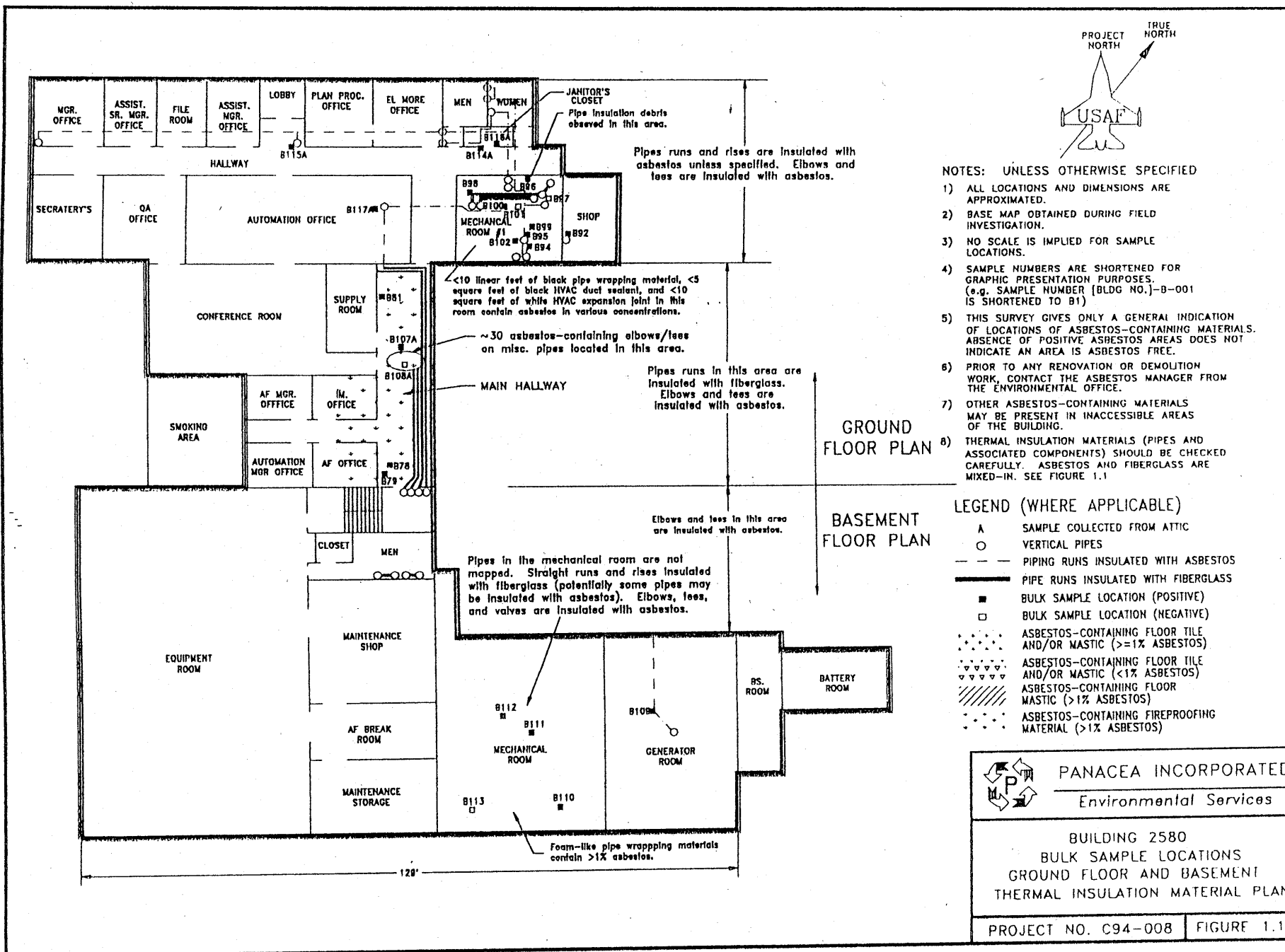
- 1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATED.
- 2) BASE MAP OBTAINED DURING FIELD INVESTIGATION.
- 3) NO SCALE IS IMPLIED FOR SAMPLE LOCATIONS.
- 4) SAMPLE NUMBERS ARE SHORTENED FOR GRAPHIC PRESENTATION PURPOSES. (e.g. SAMPLE NUMBER [BLDG NO.]-0-001 IS SHORTENED TO B1)
- 5) THIS SURVEY GIVES ONLY A GENERAL INDICATION OF LOCATIONS OF ASBESTOS-CONTAINING MATERIALS. ABSENCE OF POSITIVE ASBESTOS AREAS DOES NOT INDICATE AN AREA IS ASBESTOS FREE.
- 6) PRIOR TO ANY RENOVATION OR DEMOLITION WORK, CONTACT THE ASBESTOS MANAGER FROM THE ENVIRONMENTAL OFFICE.
- 7) OTHER ASBESTOS-CONTAINING MATERIALS MAY BE PRESENT IN INACCESSIBLE AREAS OF THE BUILDING.
- 8) THERMAL INSULATION MATERIALS (PIPES AND ASSOCIATED COMPONENTS) SHOULD BE CHECKED CAREFULLY. ASBESTOS AND FIBERGLASS ARE MIXED-IN. SEE FIGURE 1.1

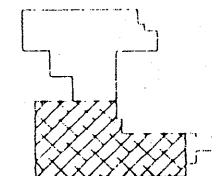
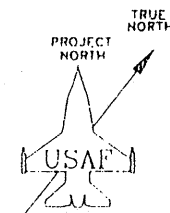
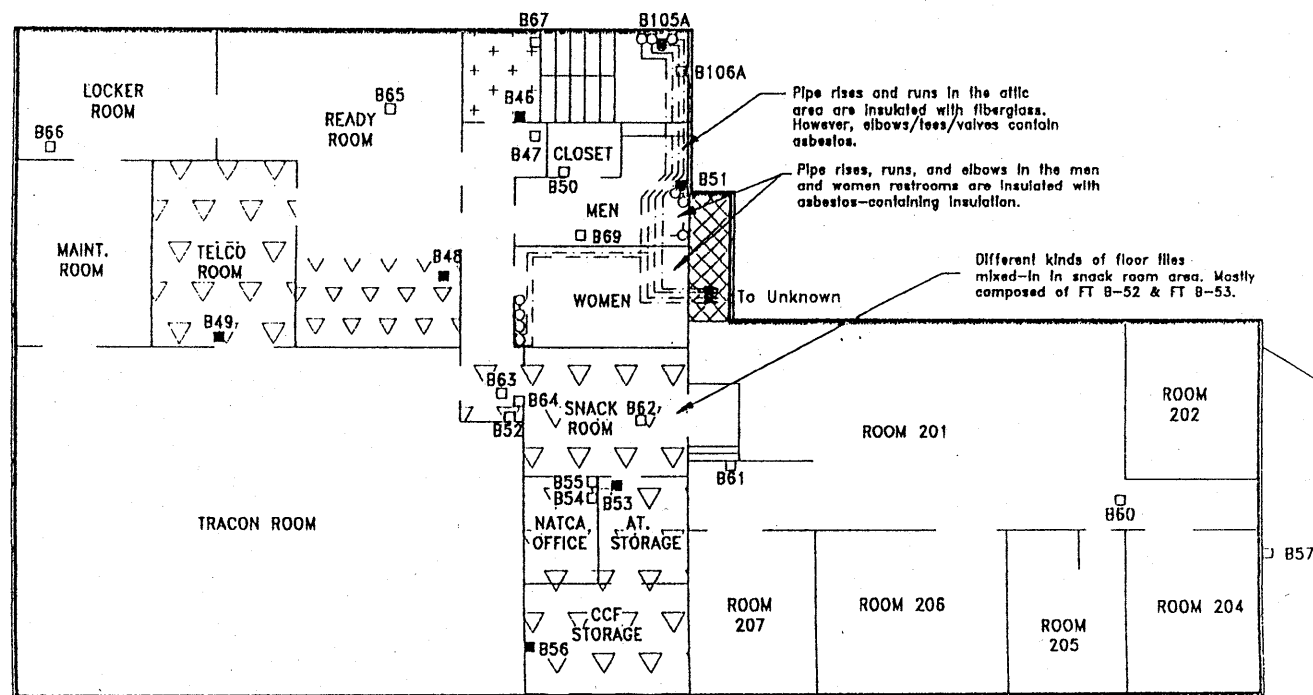
LEGEND (WHERE APPLICABLE)

- A SAMPLE COLLECTED FROM ATTIC
- VERTICAL PIPES
- PIPING RUNS INSULATED WITH ASBESTOS
- PIPE RUNS INSULATED WITH FIBERGLASS
- BULK SAMPLE LOCATION (POSITIVE)
- BULK SAMPLE LOCATION (NEGATIVE)
- ASBESTOS-CONTAINING FLOOR TILE AND/OR MASTIC (>=1% ASBESTOS)
- ASBESTOS-CONTAINING FLOOR TILE AND/OR MASTIC (<1% ASBESTOS)
- //// ASBESTOS-CONTAINING FLOOR MASTIC (>1% ASBESTOS)
- ASBESTOS-CONTAINING FIREPROOFING MATERIAL (>1% ASBESTOS)

GROUND FLOOR PLAN

BASEMENT FLOOR PLAN





KEY PLAN

NOTES: UNLESS OTHERWISE SPECIFIED

- 1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATED.
- 2) BASE MAP OBTAINED DURING FIELD INVESTIGATION.
- 3) NO SCALE IS IMPLIED FOR SAMPLE LOCATIONS.
- 4) SAMPLE NUMBERS ARE SHORTENED FOR GRAPHIC PRESENTATION PURPOSES. (e.g. SAMPLE NUMBER [BLDG NO.]-B-001 IS SHORTENED TO B1)
- 5) THIS SURVEY GIVES ONLY A GENERAL INDICATION OF LOCATIONS OF ASBESTOS-CONTAINING MATERIALS. ABSENCE OF POSITIVE ASBESTOS AREAS DOES NOT INDICATE AN AREA IS ASBESTOS FREE.
- 6) PRIOR TO ANY RENOVATION OR DEMOLITION WORK, CONTACT THE ASBESTOS MANAGER FROM THE ENVIRONMENTAL OFFICE.
- 7) OTHER ASBESTOS-CONTAINING MATERIALS MAY BE PRESENT IN INACCESSIBLE AREAS OF THE BUILDING.

LEGEND

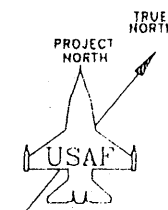
- A SAMPLE COLLECTED FROM ATTIC
- O VERTICAL PIPE
- PIPING RUNS INSULATED WITH FIBERGLASS (UNLESS OTHERWISE SPECIFIED)
- BULK SAMPLE LOCATION (POSITIVE)
- BULK SAMPLE LOCATION (NEGATIVE)
- ASBESTOS-CONTAINING FLOOR TILE AND/OR MASTIC (>1% ASBESTOS)
- XXXXXX INACCESSIBLE AREA
- △△△△△ ASBESTOS-CONTAINING FLOOR TILE AND/OR MASTIC (<1% ASBESTOS)



PANACEA INCORPORATED
Environmental Services

BUILDING 2580
BULK SAMPLE LOCATIONS
MEZZANINE FLOOR PLAN

PROJECT NO. C94-008 FIGURE 2



NOTES: UNLESS OTHERWISE SPECIFIED

- 1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATED.
- 2) BASE MAP OBTAINED DURING FIELD INVESTIGATION.
- 3) NO SCALE IS IMPLIED FOR SAMPLE LOCATIONS.
- 4) SAMPLE NUMBERS ARE SHORTENED FOR GRAPHIC PRESENTATION PURPOSES. (e.g. SAMPLE NUMBER [BLDG NO.]-B-001 IS SHORTENED TO B1)
- 5) THIS SURVEY GIVES ONLY A GENERAL INDICATION OF LOCATIONS OF ASBESTOS-CONTAINING MATERIALS. ABSENCE OF POSITIVE ASBESTOS AREAS DOES NOT INDICATE AN AREA IS ASBESTOS FREE.
- 6) PRIOR TO ANY RENOVATION OR DEMOLITION WORK, CONTACT THE ASBESTOS MANAGER FROM THE ENVIRONMENTAL OFFICE.
- 7) OTHER ASBESTOS-CONTAINING MATERIALS MAY BE PRESENT IN INACCESSIBLE AREAS OF THE BUILDING.

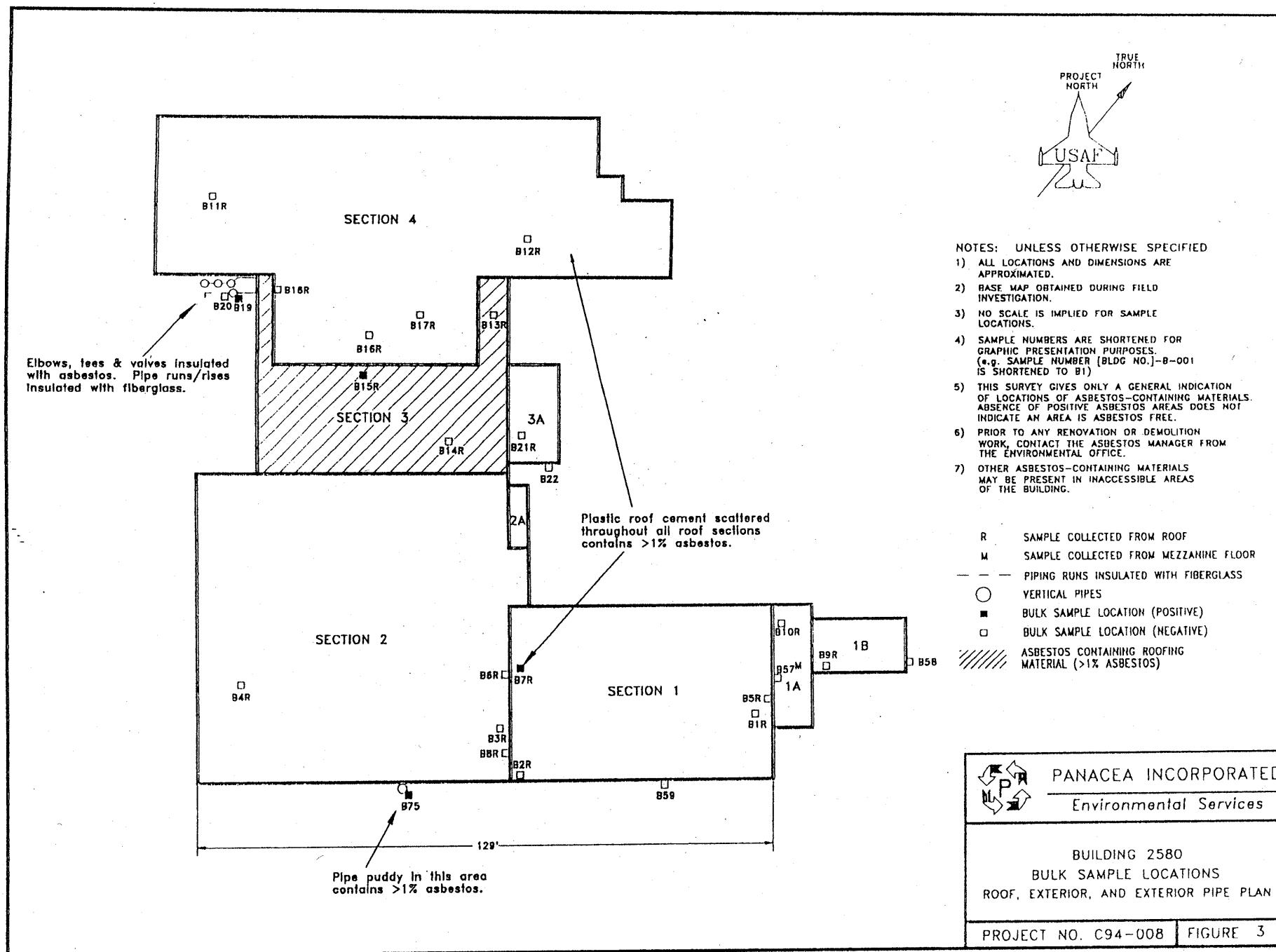
- R SAMPLE COLLECTED FROM ROOF
 M SAMPLE COLLECTED FROM MEZZANINE FLOOR
 --- PIPING RUNS INSULATED WITH FIBERGLASS
 ○ VERTICAL PIPES
 ■ BULK SAMPLE LOCATION (POSITIVE)
 □ BULK SAMPLE LOCATION (NEGATIVE)
 // ASBESTOS CONTAINING ROOFING MATERIAL (>1% ASBESTOS)



PANACEA INCORPORATED
 Environmental Services

BUILDING 2580
 BULK SAMPLE LOCATIONS
 ROOF, EXTERIOR, AND EXTERIOR PIPE PLAN

PROJECT NO. C94-008 FIGURE 3



Friday June 09 1995

REPORT 1
GROUPED BY INDIVIDUAL FACILITY AND SURVEY TYPE

For Discussion and Management Purposes Only

Facility No. : **2580**

Type of Survey : **Asbestos**

Estimated Removal Cost : **\$70,793**

Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-001 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, southern portion, section #1	Remediated?		Remed. Cost :		
2580-B-002 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, southern portion, section #1	Remediated?		Remed. Cost :		
2580-B-003 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, southern portion, section #2	Remediated?		Remed. Cost :		
2580-B-004 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, southern portion, section #2	Remediated?		Remed. Cost :		
2580-B-005 Test Result: ND	Rolled-on roofing material, vertical surface, black	Roof, southern portion, section #1	Remediated?		Remed. Cost :		
2580-B-006 Test Result: ND	Roofing felt, white, rubbery	Roof, southern portion, section #2	Remediated?		Remed. Cost :		

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-007 Test Result: 5% CH	Plastic roof cement (roof mastic), black & gray	Roof, southern portion, section #1	<50 sq. feet Remediated? No	Included roof mastic in all sections.	4 Remed. Cost : \$1,250	Removal	In nonfriable and good condition.
2580-B-008 Test Result: ND	Rolled-on roofing material, horizontal surface, black, painted silver	Roof, southern portion, section #2	Remediated?		Remed. Cost :		
2580-B-009 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, southern portion, section #1B	Remediated?		Remed. Cost :		
2580-B-010 Test Result: ND	Rolled-on roofing material, horizontal surface, black, painted white	Roof, southern portion, section #1A	Remediated?		Remed. Cost :		
2580-B-011 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, northern portion, section #4	Remediated?		Remed. Cost :		
2580-B-012 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, northern portion, section #4	Remediated?		Remed. Cost :		
2580-B-013 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, central portion, section #3	Remediated?		Remed. Cost :		
2580-B-014 Test Result: ND	Built-up roofing material, horizontal surface, black	Roof, central portion, section #3	Remediated?		Remed. Cost :		
2580-B-015 Test Result: 1% CH	Built-up roofing material, horizontal surface, black	Roof, central portion, section #3	~1,600 sq. feet Remediated? No	Included section #3 roof only.	4 Remed. Cost : \$1,600	Removal	In nonfriable and good condition.

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-016 Test Result: ND	HVAC duct sealant material, white, rubbery	Roof, central portion, section #4	Remediated?		Remed. Cost :		
2580-B-017 Test Result: ND	HVAC duct sealant material, beige, canvas-like	Roof, central portion, section #4	Remediated?		Remed. Cost :		
2580-B-018 Test Result: ND	HVAC duct wrapping material, beige, painted light gray, canvas-like	Roof, central portion, section #4	Remediated?		Remed. Cost :		
2580-B-019 Test Result: 10% CH	Pipe insulation, elbow, 6" OD, white, painted gray, powdery	Ground floor, central portion, exterior of conference room	~16 elbows, tees, & valves Remediated? No	Included only exterior elbows, tees & valves in this area.	2 Remed. Cost : \$1,540	Removal	In friable and damaged condition.
2580-B-020 Test Result: ND	Pipe insulation, vertical rise, black, painted gray, fiberglass underneath	Ground floor, central portion, exterior of conference room	Remediated?		Remed. Cost :		
2580-B-021 Test Result: ND	Rolled-on roofing material, horizontal surface, brown	Roof, central portion, section #3A	Remediated?		Remed. Cost :		
2580-B-022 Test Result: ND (TEM)	Floor tile, beige, brown streaks	Ground floor, central portion, exterior, outside the tool shed	Remediated?		Remed. Cost :		
2580-B-023 Test Result: 2% CH	Mastic, black, under carpet	Ground floor, northern portion, hallway, outside secretary's area	~2,300 sq. feet Remediated? No	Included all mastic areas in the ground floor portion.	4 Remed. Cost : \$7,705	Removal	In nonfriable and good condition.
2580-B-024 Test Result: ND	Cove base and brown mastic, 6" height, dark brown	Ground floor, northern portion, hallway, outside secretary's area	Remediated?		Remed. Cost :		

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-025 Test Result: ND	Interior stucco wall, off-white	Ground floor, northern portion, hallway, outside secretary's area	Remediated?		Remed. Cost :		
2580-B-026 Test Result: FT = 2% CH, MAS = 5% CH	Floor tile and black mastic, 9"x9", tan, dark brown streaks, under carpet	Ground floor, northern portion, secretary's area	~3,000 sq. feet Remediated? No	Included all floor tiles areas under carpet in the ground floor portion.	4 Remed. Cost : \$10,251	Removal	In nonfriable and good condition.
2580-B-027 Test Result: ND	Floor leveling compound, white, under carpet	Ground floor, northern portion, secretary's area	Remediated?		Remed. Cost :		
2580-B-028 Test Result: 1% CH	Mastic, black	Ground floor, northern portion, file room	0 Remediated? No	Included in Sample B-023	4 Remed. Cost :	Removal	In nonfriable and good condition.
2580-B-029 Test Result: ND	Wallboard (drywall), white, green fabric	Ground floor, northern portion, file room	Remediated?		Remed. Cost :		
2580-B-030 Test Result: ND	Interior stucco wall, off-white	Ground floor, northern portion, lobby	Remediated?		Remed. Cost :		
2580-B-031 Test Result: FT = >1%CH, MAS = ND	Floor tile and black mastic, tan, wood underneath	Ground floor, northern portion, automation room	0 Remediated? No	Included in Sample B-026	4 Remed. Cost :	Removal	In nonfriable and good condition.
2580-B-032 Test Result: ND	Plaster wall, off-white	Ground floor, northern portion, men's restroom	Remediated?		Remed. Cost :		
2580-B-033 Test Result: 1% CH	Mastic, black	Ground floor, northern portion, emergency exit area	0 Remediated? No	Included in Sample B-023	4 Remed. Cost :	Removal	In nonfriable and good condition.

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-034 Test Result: <1% CH	Mastic, black	Ground floor, central portion, main hallway	0 Remediated? No	Included in Sample B-023	4 Remed. Cost :	Removal	In nonfriable and good condition. Although not considered as ACM, it is homogeneous with B-023. See B-023.
2580-B-035 Test Result: ND	Mastic, black	Ground floor, central portion, AF manager office	 Remediated?		 Remed. Cost :		
2580-B-036 Test Result: ND	Floor leveling compound, white, black mastic	Ground floor, southern portion, stairway	 Remediated?		 Remed. Cost :		
2580-B-037 Test Result: ND	Linoleum and black mastic, gray, under carpet area only	Ground floor, southern portion, stairway	 Remediated?		 Remed. Cost :		
2580-B-038 Test Result: FT=3% CH (TEM), MAS=ND	Floor tile and clear mastic, size unknown, green, under B-37	Ground floor, southern portion, stairway	<100 sq. feet Remediated? No	Included area under B-037 linoleum.	4 Remed. Cost : \$335	Removal	In nonfriable and good condition. This material was observed under B-037. However may not be present under all B-037 covered areas.
2580-B-039 Test Result: <1% CH (TEM), MAS= ND	Floor tile and black mastic, size unknown, tan, under B-37	Ground floor, southern portion, stairway	Mixed-In with B-038 Remediated? No	Mixed-In and Included with B-038.	4 Remed. Cost :	No Action	In nonfriable and good condition. Not considered as ACM under EPA regulations. However, must comply with Cal-OSHA regulation as an ACCM.
2580-B-040 Test Result: ND, Assumed Positive	Mastic, black, under carpet	Basement, southern portion, stairway	0 Remediated? No	Assumed homogeneous with B-023	4 Remed. Cost :	Removal	Assumed homogeneous with B-023.
2580-B-041 Test Result: FT=1% CH, MAS=ND	Floor tile and black mastic, 9"x9", beige, black streaks, under carpet	Basement, southern portion, equipment room	~4,300 sq. feet Remediated? No	Included equipment room and adjacent areas in the basement portion.	4 Remed. Cost : \$9,030	Removal	In nonfriable and good condition.
2580-B-042 Test Result: FT=>1% CH, MAS=ND	Floor tile and black mastic, 9"x9", beige, black streaks, under carpet	Basement, southern portion, equipment room	0 Remediated? No	Included in B-041.	4 Remed. Cost :	Removal	In nonfriable and good condition.

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-043 Test Result: FT=>1% CH, MAS=ND	Floor tile and black mastic, 9"x9", off-white, black streaks	Basement, southern portion, maintenance storage	0 Remediated? No	Included in B-041	4 Remed. Cost :	Removal	In nonfriable and good condition.
2580-B-044 Test Result: FT=>1% CH (TEM), MAS=ND	Floor tile and yellow mastic, 1'x1', off-white, black streaks	Basement, southeastern portion, generator room	~2,300 sq. feet Remediated? No	Included mechanical and generator rooms only.	4 Remed. Cost : \$4,830	Removal	In nonfriable and good condition.
2580-B-045 Test Result: <1% CH/TR (TEM), MAS=ND	Floor tile and yellow mastic, 1'x1', off-white, black streaks	Basement, southeastern portion, mechanical room	0 Remediated? No	Included in B-044.	4 Remed. Cost :	Removal	In nonfriable and good condition. Although not considered as ACM, it is homogeneous with B-044. See B-044.
2580-B-046 Test Result: FT=> 1%CH, MAS=ND	Floor tile and black mastic, 9"x9", green	Mezzanine floor, southern portion, stairway	~80 sq. feet Remediated? No	Included only the stairway area.	4 Remed. Cost : \$168	Removal	In nonfriable and good condition.
2580-B-047 Test Result: ND (TEM)	Floor tile and yellow mastic, size unknown, white	Mezzanine floor, southern portion, hallway, outside men's room	Remediated?		Remed. Cost :		
2580-B-048 Test Result: FT=<1% CH, MAS=ND	Floor tile and yellow mastic, 1'x1', white, gray streaks	Mezzanine floor, southern portion, ready room	~150 sq. feet Remediated? No	Included portions of Ready room only.	4 Remed. Cost :	No Action	Nonfriable and in good condition. Not considered as an ACM under EPA regulations. However, must comply with Cal-OSHA regulations as an ACCM.
2580-B-049 Test Result: <1% CH	Floor tile, 9"x9", beige, black streaks	Mezzanine floor, southern portion, Telco room	~290 sq. feet Remediated? No	Included Telco room only.	4 Remed. Cost :	No Action	Nonfriable and in good condition. Not considered as an ACM under EPA regulations. However, must comply with Cal-OSHA regulations as an ACCM.
2580-B-050 Test Result: ND	Plaster ceiling, white, painted beige	Mezzanine floor, southern portion, men's restroom	Remediated?		Remed. Cost :		
2580-B-051 Test Result: 85% CH	Pipe insulation, elbow, 3" OD, white, powdery	Mezzanine floor, southern portion, men's restroom	~40 elbows/tees Remediated? No	Included elbows/tees found in mezzanine area/attic only.	3 Remed. Cost : \$1,600	Removal	In friable and good condition.

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-052 Test Result: ND (TEM)	Floor tile and yellow mastic, size unknown, blue	Mezzanine floor, southern portion, hallway outside Tracon	Remediated?		Remed. Cost :		
2580-B-053 Test Result: FT=<1% CH (TEM), MAS=ND	Floor tile and yellow mastic, size unknown, white	Mezzanine floor, southern portion, AT storage	~640 sq. feet Remediated? No	Included AT Storage, NATCA Office, Snack Room, CCF Room	4 Remed. Cost :	No Action	In nonfriable and good condition. Not considered as ACM under EPA regulations. However must comply with Cal-OSHA regulations.
2580-B-054 Test Result: ND	Cove base and brown mastic, 4" height, dark brown	Mezzanine floor, southern portion, NATCA office	Remediated?		Remed. Cost :		
2580-B-055 Test Result: ND	Wallboard (drywall) and joint compound, off-white	Mezzanine floor, southern portion, NATCA office	Remediated?		Remed. Cost :		
2580-B-056 Test Result: FT=<1% CH (TEM), MAS=ND	Floor tile and yellow mastic, size unknown, blue	Mezzanine floor, southern portion, CCF storage	0 Remediated? No	Included in B-053	4 Remed. Cost :	No Action	In nonfriable and good condition. Not considered as ACM under EPA regulations. However must comply with Cal-OSHA regulations.
2580-B-057 Test Result: ND	Exterior stucco wall, beige	Mezzanine floor, southeastern portion, exterior of Room 204	Remediated?		Remed. Cost :		
2580-B-058 Test Result: ND	Exterior stucco wall, beige	Basement, southeastern portion, exterior of battery room	Remediated?		Remed. Cost :		
2580-B-059 Test Result: ND	Exterior stucco wall, beige	Basement, southeastern portion, exterior of generator room	Remediated?		Remed. Cost :		
2580-B-060 Test Result: ND	Ceiling tile, 2'x4', white, random crevices & holes, gray matrix	Mezzanine floor, southeastern portion, hallway outside Room 204	Remediated?		Remed. Cost :		

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-061 Test Result: ND	Ceiling tile, 2'x4', off-white, random crevices & holes, gray matrix	Mezzanine floor, southeastern portion, hallway outside Room 207	Remediated?		Remed. Cost :		
2580-B-062 Test Result: ND	Ceiling tile, 2'x4', white, direc. crevices & holes, gray matrix	Mezzanine floor, southern portion, snack room	Remediated?		Remed. Cost :		
2580-B-063 Test Result: ND	Ceiling tile, white, smooth	Mezzanine floor, southern portion, hallway outside Tracon	Remediated?		Remed. Cost :		
2580-B-064 Test Result: ND	Wallboard (drywall) and joint compound, off-white	Mezzanine floor, southern portion, hallway outside Tracon	Remediated?		Remed. Cost :		
2580-B-065 Test Result: ND	Ceiling tile, 2'x4', white	Mezzanine floor, southern portion, ready room	Remediated?		Remed. Cost :		
2580-B-066 Test Result: ND	Wallboard (drywall) and joint compound, white	Mezzanine floor, southern portion, locker room	Remediated?		Remed. Cost :		
2580-B-067 Test Result: ND	Plaster ceiling, off-white	Mezzanine floor, southern portion, stairway	Remediated?		Remed. Cost :		
2580-B-068 Test Result: ND	Ceiling tile, 2'x4', white, direc. crevices & holes, gray matrix	Basement, southern portion, men's restroom, closet	Remediated?		Remed. Cost :		
2580-B-069 Test Result: ND	Plaster ceiling, white, painted beige	Basement, southern portion, men's restroom	Remediated?		Remed. Cost :		

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-070 Test Result: ND	Ceiling tile, 2'x4', white, with yellow insulation	Basement, southern portion, equipment room	Remediated?		Remed. Cost :		
2580-B-071 Test Result: ND	Ceiling tile, 2'x4', white, random crevices & holes	Basement, southern portion, equipment room	Remediated?		Remed. Cost :		
2580-B-072 Test Result: ND	Ceiling tile, 2'x4', white, random crevices & holes, gray matrix	Basement, southern portion, AF break room	Remediated?		Remed. Cost :		
2580-B-073 Test Result: ND	Ceiling tile, 2'x4', white, sm random crevices & holes, gray	Basement, southern portion, maintenance storage	Remediated?		Remed. Cost :		
2580-B-074 Test Result: ND	Ceiling tile, 2'x4', white, directional crevices & holes, lt gray	Basement, southern portion, maintenance storage	Remediated?		Remed. Cost :		
2580-B-075 Test Result: 8% CH	Pipe Puddy, gray, painted beige	Basement, southern portion, exterior of maintenance storage	<1 sq. feet Remediated? No	Included this area only.	3 Remed. Cost : \$40	Removal	In friable and good condition.
2580-B-076 Test Result: ND	Wallboard (drywall) and joint compound, white	Basement, southern portion, equipment room	Remediated?		Remed. Cost :		
2580-B-077 Test Result: ND	Ceiling tile, 2'x4', white, direc. crevices & holes, gray matrix	Ground floor, central portion, hallway outside AF office	Remediated?		Remed. Cost :		
2580-B-078 Test Result: 40% CH	Fireproofing debris, gray	Ground floor, central portion, hallway outside AF office	~700 sq. feet Remediated? No	Included fireproofing and impacted ceiling tile areas in central portion of ground floor.	1 Remed. Cost : \$15,950	Removal	In friable and significantly damaged condition. Ceiling tiles also impacted. Estimated cost included ceiling tiles.

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-079 Test Result: 55% CH	Fireproof, gray	Ground floor, central portion, hallway outside AF office	0 Remediated? No	Included in Sample B-078	2 Remed. Cost :	Removal	In friable and damaged condition.
2580-B-080 Test Result: ND	Interior stucco wall, white	Ground floor, northern portion, hallway between mech. rm # 1 & automation office	Remediated?		Remed. Cost :		
2580-B-081 Test Result: 40% CH	Fireproof, gray	Ground floor, central portion, hallway outside the supply room	0 Remediated? No	Included in Sample B-078	2 Remed. Cost :	Removal	In friable and damaged condition.
2580-B-082 Test Result: ND	Interior stucco wall, white	Ground floor, northern portion, hallway outside the women's restroom	Remediated?		Remed. Cost :		
2580-B-083 Test Result: ND	Interior stucco wall, white	Ground floor, northern portion, hallway outside the women's restroom	Remediated?		Remed. Cost :		
2580-B-084 Test Result: ND	Interior stucco ceiling, white	Ground floor, northern portion, hallway outside secretary's area	Remediated?		Remed. Cost :		
2580-B-085 Test Result: ND	Interior stucco wall, white	Ground floor, northern portion, hallway outside secretary's area	Remediated?		Remed. Cost :		
2580-B-086 Test Result: ND	Ceiling tile, 2'x2', white, direc. crevices & holes, gray matrix	Ground floor, northern portion, hallway outside secretary's area	Remediated?		Remed. Cost :		
2580-B-087 Test Result: ND	Ceiling tile and mastic, 1'x1', white, random crevices, white matrix	Ground floor, northern portion, plan procedure office	Remediated?		Remed. Cost :		

Type of Survey : **Asbestos**

Estimated Removal Cost : **\$70,793**

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Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-088 Test Result: ND	Ceiling tile and mastic, 1'x1', white, random crevices, white matrix	Ground floor, northern portion, El More's office	Remediated?		Remed. Cost :		
2580-B-089 Test Result: ND	Ceiling tile, 2'x2', white, direc. crevices & holes, gray matrix	Ground floor, northern portion, automation office	Remediated?		Remed. Cost :		
2580-B-090 Test Result: ND	Ceiling tile, 1'x1', white, random crevices, white matrix	Ground floor, northern portion, automation office	Remediated?		Remed. Cost :		
2580-B-091 Test Result: ND	Ceiling tile, 2'x4', white, direc. crevices & holes, gray matrix	Basement, southeastern portion, BS room	Remediated?		Remed. Cost :		
2580-B-092 Test Result: <1% CH	Pipe insulation, vertical rise, 4" OD, gray, aircell	Ground floor, northern portion, shop	0 Remediated? No	Included in Sample B-094.	1 Remed. Cost :	Removal	In friable and good condition. Although not considered as ACM, it is homogeneous with B-094. See B-094.
2580-B-093 Test Result: FT= 1% CH, MAS= ND	Floor tile and yellow mastic, 1'x1', white, black streaks	Ground floor, northern portion, mechanical room #1	~400 sq. feet Remediated? No	Included Mech. Room #1 only.	4 Remed. Cost : \$840	Removal	In nonfriable and good condition.
2580-B-094 Test Result: 15% CH	Pipe insulation, straight run, 6" OD, gray, painted green, aircell	Ground floor, northern portion, mechanical room #1	~150 linear ft. Remediated? No	Included pipes in Mech. Room #1 & Shop only.	3 Remed. Cost : \$2,700	Removal	In friable and good condition. However, in certain areas observed in damaged/sign. damaged condions.
2580-B-095 Test Result: 5% AM	Pipe insulation, elbow, 6" OD, white, painted green, powdery	Ground floor, northern portion, mechanical room #1	<30 elbows/tees Remediated? No	Included elbows/tees/valves in Mech. Room #1 only.	3 Remed. Cost : \$1,200	Removal	In friable and good condition.
2580-B-096 Test Result: 5%CH & 65% AM	Pipe insulation debris, white, painted green, powdery	Ground floor, northern portion, mechanical room #1	<20 sq. feet Remediated? No	Included debris on floor and water heater of Mech. Rm. #1.	1 Remed. Cost : \$1,000	Removal	In friable and significantly damaged condition.

Type of Survey : **Asbestos**Estimated Removal Cost : **\$70,793**Estimated Air Monitoring Cost : **\$28,317**

Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-097 Test Result: ND	Pipe insulation, vertical rise, 4" OD, white, painted pink, fiberglass underneath	Ground floor, northern portion, mechanical room #1	Remediated?		Remed. Cost :		
2580-B-098 Test Result: <1% CH	Pipe insulation, elbow, 6" OD, white, painted pink, powdery	Ground floor, northern portion, mechanical room #1	0 Remediated? No	Included in Sample B-095.	3 Remed. Cost :	Removal	In friable and good condition. Although not considered as ACM, it is homogeneous with B-095. See B-095.
2580-B-099 Test Result: <1% CH	Pipe wrapping material, 3" OD, black	Ground floor, northern portion, mechanical room #1 on compressor	<10 linear feet Remediated? No	Included this material on compressors only.	4 Remed. Cost :	No Action	In nonfriable and good condition. Not considered as ACM under EPA regulations. However must comply with Cal-OSHA regulations.
2580-B-100 Test Result: 10% CH	HVAC duct sealant material, white, foam-like	Ground floor, northern portion, mechanical room #1 on HVAC unit	<5 sq. feet Remediated? No	Small patches observed in this room.	3 Remed. Cost : \$90	Removal	In friable and good condition.
2580-B-101 Test Result: ND	HVAC duct wrapping material, beige, cloth-like	Ground floor, northern portion, mechanical room #1 on HVAC unit	Remediated?		Remed. Cost :		
2580-B-102 Test Result: 98% CH	HVAC expansion joint, white, canvas-like	Ground floor, northern portion, mechanical room #1 on HVAC unit	<10 sq. feet Remediated? No	Included HVAC expansion joint in this room only.	3 Remed. Cost : \$100	Removal	In friable and good condition.
2580-B-103 Test Result: >1% CH	Floor tile, 9"x9", off-white	Ground floor, northern portion, mechanical room #1, only a portion of the room	0 Remediated? No	Included in Sample B-093.	4 Remed. Cost :	Removal	In nonfriable and good condition. Mixed-in with B-093.
2580-B-104 Test Result: FT=> 1%CH, MAS= 1%CH	Floor tile and black mastic, 9"x9", tan, brown streaks	Ground floor, northern portion, near restroom, janitor's closet	~40 sq. feet Remediated? No	Included janitor's closet only.	4 Remed. Cost : \$134	Removal	In nonfriable and good condition.
2580-B-105 Test Result: 35% CH & 1% AM	Pipe insulation, elbow, 6" OD, white, powdery	Mezzanine floor, attic, central portion, concrete vault next to stairway	~12 elbows/tees Remediated? No	Included elbows/tees found in the vault area only.	2 Remed. Cost : \$1,380	Removal	In friable and damaged condition. This area can be accessed through a stairway opening.

Type of Survey :

Asbestos

Estimated Removal Cost :

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Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-106 Test Result: ND	Pipe insulation, straight run, 6" OD, white, with yellow insulation	Mezzanine floor, attic, central portion, concrete vault next to stairway	Remediated?		Remed. Cost :		
2580-B-107 Test Result: 25% CH	Pipe insulation, elbow, 3" OD, white, powdery	Ground floor, attic, central portion, above ceiling tiles	<50 elbows/tees Remediated? No	Included central portion where fireproofing was observed.	2 Remed. Cost : \$2,900	Removal	In friable and damaged condition.
2580-B-108 Test Result: ND	Pipe insulation, straight run, 3" OD, white, with yellow insulation	Ground floor, attic, central portion, above ceiling tiles	Remediated?		Remed. Cost :		
2580-B-109 Test Result: <1% CH, 25% AM	Pipe insulation, straight run, 20" OD, white, painted silver, powdery	Basement, southeastern portion, generator room	~20 linear ft. Remediated? No	Included only 1 20"OD pipe in this room.	3 Remed. Cost : \$440	Removal	In friable and good condition.
2580-B-110 Test Result: 35% CH	Pipe insulation, elbow, 20" OD, white, painted blue, powdery	Basement, southeastern portion, mechanical room	<100 elbows/tees Remediated? No	Included misc. elbows/tees/valves found in this room only.	3 Remed. Cost : \$4,000	Removal	In friable and good condition.
2580-B-111 Test Result: 8%CH	Pipe wrapping material, 4" OD, beige, painted gray, foam like	Basement, southeastern portion, mechanical room	<5 sq. feet Remediated? No	Found in small patches in this room only.	3 Remed. Cost : \$90	Removal	In friable and good condition.
2580-B-112 Test Result: 10% CH	Pipe wrapping material, 4" OD, black, painted gray, foam-like	Basement, southeastern portion, mechanical room	<40 linear ft. Remediated? No	Included the material found on 3 compressors in this room.	3 Remed. Cost : \$720	Removal	In friable and good condition.
2580-B-113 Test Result: ND	HVAC duct wrapping material, white	Basement, southeastern portion, mechanical room, HVAC unit	Remediated?		Remed. Cost :		
2580-B-114 Test Result: <1% CH	Pipe insulation, straight run, 3" OD, gray, aircell	Ground floor, attic, northern portion, near restroom, janitor's closet	~180 linear ft. Remediated? No	Included pipes found in the northern portion attic of ground floor only.	3 Remed. Cost :	Clean Up	In friable and damaged condition. Not considered as ACM under EPA regulations. But this material is similar to pipe insulation that commonly contains >1% asbestos.

Type of Survey : **Asbestos**

Estimated Removal Cost : **\$70,793**

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Sample No.	Material / Description	Sample Location	Estimated Area	Homogeneous Area	Remediation Priority	Remediation Description	Additional Comment
2580-B-115 Test Result: <1% CH	Pipe insulation, elbow, 3" OD, white, powdery	Ground floor, attic, northern portion, above the hallway near lobby area	<25 elbows/tees Remediated? No	Included elbows/tees found in the northern portion attic of ground floor only.	3 Remed. Cost :	Clean Up	In friable and damaged condition. Not considered as ACM under EPA regulations. But this material is similar to pipe insulation that commonly contains >1% asbestos.
2580-B-116 Test Result: 78% CH	Canvas-like material, beige, painted black	Ground floor, attic, northern portion, above janitor's closet	<3 sq. feet Remediated? No	1 loose piece observed in the attic	1 Remed. Cost : \$900	Removal	In friable and significantly damaged condition.
2580-B-117 Test Result: <1% CH	Pipe insulation debris, white, powdery	Ground floor, attic, northern portion, above automation office	<10 sq. feet Remediated? No	Included only area in the northern attic space.	3 Remed. Cost :	Clean Up	In friable and sign. damaged condition. Not considered as ACM under EPA regulations. But this material is similar to pipe insulation that commonly contains >1% asbestos.

WHERE APPLICABLE:

This survey gives only a general indication of locations of asbestos-containing materials or lead-based paint. Absence of positive asbestos/lead areas does not indicate an area is asbestos/lead free. Prior to any renovation/demolition work, contact the asbestos manager from the environmental office.

Asbestos Survey: CH = Chrysotile; AM = Amosite; CR = Crocidolite; and AN = Anthophyllite; ND = None detected.

Lead Paint Survey: ND = Below detection limits for reporting purposes (0.5% by weight or 1.0 milligram per centimeter square).

For the lead paint survey, various names used for the shades of colors are presented below. The color names are based on the Standard Brands Paint Company's Interior-Exterior Hide-All Paint color chart.

Various Shades of White = Swiss Coffee, Whisper Beige, Navajo White, Off White, Whisper Rose.

Various Shades of Cream = Cream Delight, Antique White, Natural Lite, Sunny Yellow

Various Shades of Tan = Candlelight, Alabaster, Mink, Cashmere, Soft Suede

Various Shades of Blue = Blue Velour, Clear Blue Sky, Spy Glass Blue, and Calypso

Various Shades of Pink = Peach Parfait, Windsor Rose, Peach Velvet, Flamingo Rose

Various Shades of Brown = Mystic Sand, Brown Sugar, Tobacco Road

Shade of Green = Emerald Isle

END OF SURVEY TYPE